

Social Networks
in the
**World of Abundant
Connectivity**



Global Innovations Forum

Project Year 2001

SR-764

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ACKNOWLEDGEMENTS

Chuck N. Darrah and Jan A. English-Lueck, professors of Anthropology at San Jose State University, co-founders of the Silicon Valley Cultures Project, collaborated with the Institute for the Future in designing and conducting ethnographic research for this report. Special thanks goes to the following Anthropology students from San Jose State University who served as interns on this project: Mary McCuiston, Marlene Elwell, Benjamin Dubois, and Carol Gebet-Luetz. Special thanks also goes to Satama Interactive, who conducted ethnographic research in Helsinki, Finland.

About the ...

...GLOBAL INNOVATIONS FORUM

In today's world, companies are driven by the innovation imperative. Companies see introducing new products, processes, and ways of doing things as the only way to survive. The Global Innovations Forum (GIF) helps companies tap into a network of innovative ideas, trends, technologies, individuals, and organizations throughout the world. The project provides companies with practical insights for developing long-term presence in innovation regions such as Silicon Valley, Nordic Europe, and Japan. As a "virtual outpost" for companies interested in these regions, GIF tracks technological, consumer, and organizational innovations, and analyzes their impact on GIF clients.

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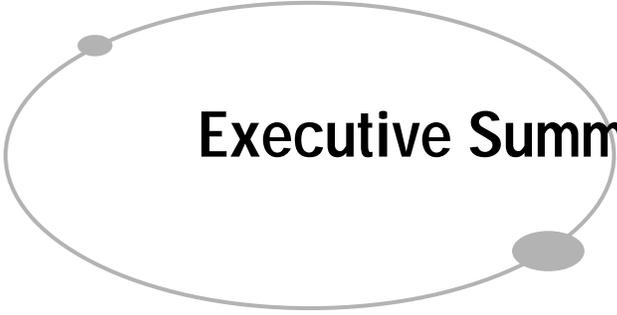
Located at the northern edge of Silicon Valley in Menlo Park, California, the Institute for the Future is an independent, nonprofit research firm that specializes in long-term forecasting. We help businesses identify and evaluate specific opportunities presented by market trends and new technologies. Founded in 1968, the Institute for the Future has become a leader in action-oriented research for business, industry, and government. Our clients include Fortune 500 companies as well as mid-sized and emerging companies. We analyze policy, forecast alternative future scenarios, and identify markets for new products and next-generation technologies.

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Executive Summary

For the last year, the Institute for the Future (ITF) has been studying how young people form and use social networks in their daily lives. Our study focused on five geographic regions: Silicon Valley in the United States, Japan, the United Kingdom, Finland, and Sweden. Our goal was twofold: one, to study the effects of new information and communication technologies on the formation of social networks among young consumers; and, two, to determine the implications of these effects for businesses, particularly as they relate to the diffusion of innovative new products and services.

By means of extensive interviews and observation, we explored the important relationships in the social networks of 13- to 27-year-olds in these regions, the function and form of such relationships, and the duration and frequency of interaction. We paid especially close attention to how the participants use technology to support and extend their networks. In this report, *Social Networks in the World of Abundant Connectivity*, we describe our methodology, key findings, and implications for businesses, with particular attention to the stories of the participants.

In Part I: *The Architecture of Social Networks*, we lay out the basic structure, processes, and interconnections in social networks. In Part II: *The Interaction of Social Networks and Domains of Daily Life*, we describe how young people put networks to use in different domains of their lives, including family, self, work, school, entertainment, mobility, and public places. Part III: *Social Networks: Applications and Lessons for Business*, includes two chapters focused on the importance of social networks to businesses. In, “Diffusion of Ideas, Products, and Services: Case Studies and Lessons,” we outline a framework for understanding the diffusion of innovations, including flows in social networks, to analyze how ideas, products, and practices migrate from one locale to another, particularly from Japan to other parts of Asia and globally. In “Turning Consumers into Advertisers: Social Network Marketing,” we assess the use of social networks for marketing and selling to consumers and identify social networks as new markets unto themselves.

PART I
THE ARCHITECTURE OF SOCIAL NETWORKS

Based on in-depth ethnographic interviews and observation, Part I provides analysis of the basic structure and processes of young people's networks or important social connections in their lives—how they are defined, organized, and managed; how far they reach and what sustains them. Studying the architecture of social networks helps us identify the shifts resulting from abundant connectivity in how young people form and use social networks, and has implications for many aspects of business operations, including innovation and R&D activities, product design, marketing and communications, and human resources

PART II
THE INTERACTION OF SOCIAL NETWORKS AND DOMAINS OF DAILY LIFE

In Part II, we analyze how the changes in the architecture of social networks, particularly their extensive reach, are experienced in young people's everyday lives. Specifically, we analyze how networks are put to use in several important domains, among them family, work, entertainment, mobility, and look at implications of network effects in these domains on the next generation of products and services.

With the growing influence of social networks on many aspects of people's lives, businesses increasingly need to start with networks as a unit of analysis when trying to understand purchasing preferences and patterns of use of various products and services. From relying on tools for identifying groups of individuals with similar characteristics, they increasingly need to understand how information and ideas flow between networks and different nodes within networks, how different influences evolve and migrate within networks, how new networks emerge and what are their needs.

PART III
SOCIAL NETWORKS: APPLICATIONS AND LESSONS FOR BUSINESS

In Part III, we discuss two critical areas for business where social networks play a part—diffusion and advertising.

**Diffusion of Ideas, Products, and Services:
Case Studies and Lessons**

Why does one product, practice, or idea catch on and spread around the world while another languishes in obscurity? While diffusion is not something a company has complete control over, several cases studies presented in this chapter, give rise to a set of principles companies can use in trying to evaluate diffusion pathways and analyze diffusion potential of different products and ideas. Analysis is based on IFTF's evaluative framework, which identifies major mechanisms driving diffusion of messages, products, and services in a global context. External forces, or those working between locales, are people, investment, and media. Internal forces, or those working within locales, are cultural traction and infrastructure.

Diffusion relies on intricate interactions between the external push of people flows, investment, and media and the internal pull of cultural traction and infrastructure support. Our case studies illustrate that diffusion is not linear. Although many companies try to stage diffusion, sometimes successfully, most often it happens through grass-roots channels and results in reinvention or reinterpretation of the original product or practice to fit local categories of meaning and social practices. What is being diffused changes in the process of diffusion.

**Turning Consumers into Advertisers:
Social Network Marketing**

Social network marketing or so-called viral marketing is becoming a holy grail for many companies. Why? Because of its tremendous power to get potential consumers' attention and sell products in a

market over-saturated with product messages. After all, recommendation from a trusted friend or family member is the best way to convince a potential customer to purchase a new product or service. Companies are increasingly turning to social network marketing as a panacea in a market where there is increasing competition for customers' attention, and where communication channels and market segments are highly fragmented.

We expect social network marketing to become increasingly more attractive in the world of abundant connectivity. However, companies pursuing such marketing are currently only leveraging word-of-mouth capabilities of social networks, that is, using them as communication channels. However, social networks should be viewed as markets in their own right. Viewed as such, companies can fill a variety of social network needs, supplying infrastructure, helping develop and maintain group identity, offer network products and services. Tapping these domains gives a company a better chance to create more lasting value for the network, and, of course, greater revenue for itself.

SOCIAL NETWORKS IN THE FUTURE: KEY FINDINGS AND IMPLICATIONS

Our research with young people in different regions and across age categories indicates that abundant connectivity is changing how these young people form and use social networks. Not only are we seeing new patterns of use but also significant shifts in the architecture and key dimensions of such networks. Businesses should expect to see the following shifts in the next ten years.

- *Wide network reach redefines traditional marketing categories.* Young people's networks cross traditional boundaries of family, ethnicity, geography, place, interests, and so on to incorporate a much wider set of relationships, both meaningful and practical. As the number of dimensions along which networks are formed increases, and these dimensions are superimposed on each other in idiosyncratic ways, the complexity of the networks is compounded. Businesses can no longer rely on the traditional demographic and psychographic categories derived from relatively large, stable, and homogenous groupings to successfully track their customers in this world of increasingly complex networks.
- *Wide reach increases speed of diffusion and innovation.* People whose networks cross multiple boundaries serve as key agents for diffusion, transmitting ideas and practices from one group or world to another. Bringing different worlds into contact also increases the chances for innovation. With more people crossing boundaries, expect the speed of diffusion and the turnover of products, practices, and ideas to speed up.
- *Social network portfolio is a key asset.* For young people, portfolios of just-in-time relationships that can be activated and deactivated as needed are important assets, making it possible for them to accomplish many tasks efficiently without prior expertise. The digital divide, in fact, may be less about access to technology than access to just-in-time relationships. In the new world, the one with the best network portfolio wins.
- *Network management is expanding.* Wide reaching networks require careful management, which takes up a considerable amount of time, energy, and money. People must learn to juggle multiple sets of relationships, each one dictating unique and idiosyncratic media choices and communication protocols. Businesses must learn to tap into these choices to reach their customers in a given context and help them manage their networks.
- *A world of multiple roles and identities.* Given the wide reach and boundary crossing of many social networks these days, many young people play multiple roles and negotiate multiple identities, each tied to a particular network or context.

In this way, young people become quite skilled at multicontexting—switching roles and identities from context to context.

- *Place and face-to-face are still important.* While young people are establishing portfolios of relationships across traditional boundaries, they still live much of their day-to-day lives in real physical places among face-to-face interactions with family, neighbors, peers, teachers, and so forth. In fact, most of their online interactions reinforce and support these real life interactions rather than replace them.

These findings have significant implications for many aspects of companies' operations, including innovation and R&D activities, product design, marketing and communications, and human resources.

INNOVATION AND R&D

Companies can increase their potential for innovation by bringing together people with knowledge and expertise from different worlds. A fertile environment for innovation requires a variety of skills, knowledge, experiences, and outlooks. It is the collision of these that often ignite the sparks of innovation.

Therefore, the key to innovation is creating dense networks of personal relationships that transcend the boundaries of individual departments, companies, universities, venture capital firms, and other institutions. Within such networks, ideas move freely and are quickly taken up, reinvented, and sent back into the world.

TECHNOLOGY PRODUCT DESIGN

Social networks thrive on connectivity and the resulting opportunity for spontaneous interaction, on the ability to establish trust and self-organize around issues, and on the capacity to maintain latent relationships that may only be activated in response to a specific and unpredictable need.

Most technology companies, however, continue to focus on building industrial strength infrastructures to support more formal organizations: e-mail, calendaring, enterprise portals, video and audio conferencing, multimedia communications, and so on. We believe that the real opportunities are in lighter-weight tools that support ad hoc teams and spontaneous collaboration within social networks that often cross formal boundaries: instant messaging, phone-, pager-, or PDA-based short messaging, personal Web cameras, peer-to-peer file and screen sharing, and so on. These technologies typically require little infrastructure, completely blur the line between personal and business use, and ignore organizational boundaries. These are the technologies much of the younger generation is embracing.

Rather than designing for formal organizations and with the goal of increasing office productivity, then, companies should design their products with social networks in mind.

MARKETING AND COMMUNICATION

Traditional segmentation methodologies seek to identify fairly large, and fairly homogeneous groups that share preferences and desires. These groups are increasingly hard to find in the world of abundant connectivity. The reason is that in a noninteractive world of independent variables and static structures, like that on which traditional marketing techniques are based, where by definition categories do not collide, overlap, and compound, the statistics of normal distributions and normative behavior work well. The bulk of the phenomena scientists and marketers study—whether consumers or behavioral patterns—live in the fat bulge of the bell curve. The tails on the bell curve of these distributions are quite small, meaning that the variance is relatively small as well.

However, in a highly interactive world of people who thrive on the large degree of personal freedom and global associations provided by their social net-

works, we would expect to see distributions characterized by “fat tails” caused by large numbers of small things. Consumer markets are fragmenting and their distribution will increasingly exhibit these fat tails of multiple niches

Thus, businesses need to find new methodologies that can track individuals rather than large homogeneous groups, allowing companies to respond to individual needs in a given context. Because people play multiple roles, participate in multiple networks, and frequently switch contexts and identities, companies need to increasingly target their messages and offerings to individuals in their current contexts rather than to groups in general. In other words, companies need to move from group marketing to more personalized and situational marketing.

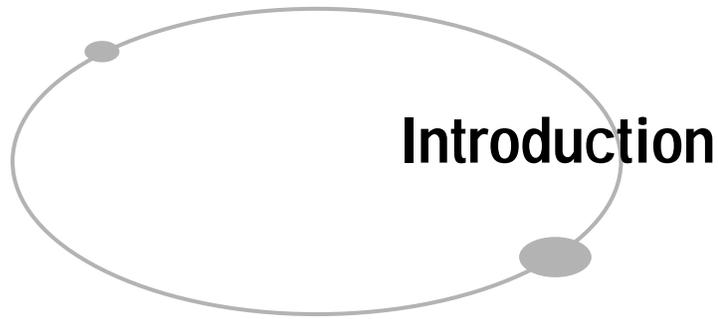
HUMAN RESOURCES

As young people change the way work is done, generational conflicts are likely to arise. Today, three generations of people work together in the typical office. In the next five to ten years, that will increase to five generations. In response, companies will increasingly need to build practices for bridging generational differences in attention management and multicontexting.

Younger generations that are growing up in the world of abundant connectivity are skilled at shifting roles, identities, and tasks. In fact, in contrast to older workers, they may often have trouble functioning in environments requiring prolonged concentration on one task. They may also have less content-specific and deep expertise in any one area, being used to easily finding the necessary knowledge among others in their social networks, both in the physical world and online. People outsource a lot of information and knowledge in social networks—the important thing is to know who to turn to when the need arises rather than to have the knowledge yourself. This method of information outsourcing may result in clashes inside multigener-

ational teams or troubles for HR departments when comparing and evaluating the competencies of different workers.

And it is not just employee competency that needs to be evaluated. Social networks play an important role in the innovation processes at companies and in their workers’ ability to perform their tasks well. Yet companies don’t have processes for evaluating the effectiveness of their employees’ social networks. They will increasingly need to acknowledge that social networks are just as important in their workers’ portfolios of skills as their content expertise, their communication skills, and their management abilities, and develop metrics for evaluating and rewarding them.



Introduction

For the last year, the Institute for the Future (IFTF) has been studying how young people form and use social networks in their daily lives. Our study focused on five geographic regions: Silicon Valley in the United States, Japan, the United Kingdom, Finland, and Sweden. Our goal was twofold: one, to study the effects of new information and communication technologies on the formation of social networks among young consumers; and, two, to determine the implications of these effects for businesses, particularly as they relate to the diffusion of innovative new products and services.

By means of extensive interviews and observation, we explored the important relationships in the social networks of 13- to 27-year-olds in these regions, the function and form of such relationships, and the duration and frequency of interaction. (See Appendix I, on page 159 for our framework for analyzing social networks.) We paid especially close attention to how the participants use technology to support and extend their networks. In this report, *Social Networks in the World of Abundant Connectivity*, we describe our methodology, key findings, and implications for businesses, with particular attention to the stories of the participants.

WHAT ARE SOCIAL NETWORKS?

Social networks can best be defined as the intricate webs of relationships by which an individual participates in the larger world. Each relationship links an individual to another individual or groups of other individuals—friends, organizations, institutions, or communities. In this way, social networks create the context in which people live among fellow human beings. After all, individuals are not simply isolated entities with innate sets of preferences and desires, but are woven into the larger fabric of community in which their desires, preferences, and behaviors are shaped by the interactions and relationships among the people they know and the formal and informal groups they are part of.

In this way, just about everyone participates in many different social networks at the same time. By looking at the types of relationships and the patterns of interaction that inform these networks, we can understand the larger social context in which individuals live.

These network relationships are organized around certain dimensions of life called domains. Family, work, culture, geography, identity, interests, and shared values are among the most important domains by which networks are structured.

Each domain may include a set of nodes or clusters. A node is a single relationship in the network, whether it is with an individual or a group. A cluster is a group of such relationships, a set of nodes organized around common principles. For example, work is an important domain of life, and the people one works with may be one cluster of the network. Family is another important domain, and may comprise more than one cluster—the mother’s relatives, the father’s relatives, the second families of divorced parents, the American relatives, the Asian relatives, and so forth. This structure repeats itself throughout the network, as nodes and clusters organize themselves within and across domains. Each domain pro-

vides a platform for supporting the relationships and clusters that make up the larger networks.

Essentially, social networks reflect who we are. For businesses, understanding social networks can tell them who their customers are, and more importantly, what they want. Who their customers include in their networks and who they leave out tell businesses much about their customers’ values, beliefs, interests, and lifestyle preferences. As emerging information and communication technologies make these networks more and more complex, the traditional marketing approach of segmenting consumers into large and somewhat homogeneous groups will grow inadequate. For businesses to succeed in winning customers in the 21st century, they must learn new ways of tracking and targeting their customers through their social networks.

WHY LOOK AT SOCIAL NETWORKS?

Understanding the dynamics of social networks is critical to the success of several aspects of companies’ operations, including research and development, innovation, communications, marketing, new product development, and human resources. Indeed, social networks play an important role as communication channels between the companies and consumers and among consumers themselves. As discussed in “Turning Consumers into Advertisers” in Part III, companies are increasingly turning to social network marketing—also called viral marketing—to get potential consumers’ attention and sell products in a market saturated with product messages. As the chapter points out, recommendations from a trusted friend or family member—from someone in the social network—are often the most important way to convince a potential customer to purchase a new product or service.

Networks Are Vehicles for Diffusion

In their roles as communication channels, social networks serve as powerful vehicles for the diffu-

sion of new ideas, products, and practices. Everett Rogers, in his book *Diffusion of Innovations*, describes how interpersonal networks influence individuals both in coping with the uncertainty of new ideas and in convincing them to adopt innovations, be they new methods for teaching math in Allegheny County, Pennsylvania or introducing new rice varieties in Indian villages. Case studies described in Part II, “Diffusion of Ideas, Products, and Services: Case Studies and Lessons,” put social networks into a larger framework for understanding why certain trends, ideas, and products migrate from one locale to another and point out critical principles for planning successful diffusion.

What’s more, earlier research presented in our report *Innovation Through Reinvention: An Exploration of Japan’s Innovation Environment* (2001), pointed out how the dynamics of social networks shape the entire purchasing cycle, from creating desire for a product or service to influencing usage patterns. Indeed, social networks assign certain objects or characteristics important, almost totemic, meaning, and they become a necessary attribute for belonging to the group. Such is the case with mobile phones in Sweden, where having a cell phone is necessary for belonging to the larger society.

Social networks also serve as important information channels. Significantly, the information passed through social networks is not just raw data, but filtered information; that is, information that has undergone the scrutiny and analysis of trusted members of the network. This process of exchanging filtered information is particularly important in the purchasing cycle for many products and services (see Figure 1). Our research indicates, for example, that purchasing decisions are often made while consumers are with the members of their social network, either window-shopping or exchanging information about products or services. This is particularly true of teenagers in Japan, who spend much time on the go with their peers. Several teenagers

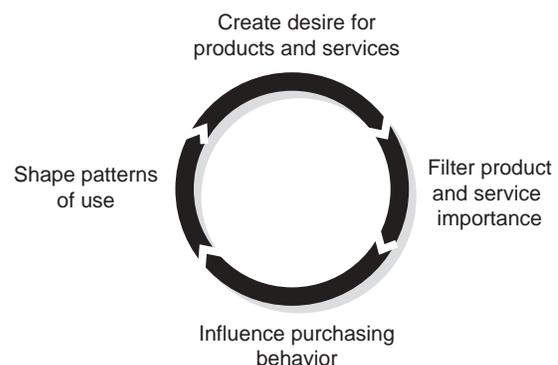
reported making the decision to purchase a product while they were with their friends, only later bringing a parent with them to actually buy it. The more companies know about the way filtered information is used and passed along, the better able they will be to leverage social networks in diffusing innovations.

Networks Explain Regional Economies

In addition to its significance at the individual level, the dynamics of social networks have also proven critical in understanding regional economies, particularly why some regions are more innovative than others. In her path-breaking book, *Regional Advantage*, Annalee Saxenian shows how Silicon Valley managed to adapt to changing patterns of international competition in the 1990s better and faster than the Route 128 region in Boston. Essentially, it was the way industrial companies were organized in the two regions that made the difference.

While both areas boasted excellent universities and a highly skilled labor force, Route 128 consisted primarily of large independent industrial firms closed to outsiders. Silicon Valley, by contrast, consisted of horizontal networks of firms that were

Figure 1
Social Networks Shape the Purchasing Cycle



Source: Institute for the Future

quite open and allowed for a high level of mobility of people, ideas, and products. According to Saxenian, “network systems flourish in regional agglomerations where repeated interaction builds shared identities and mutual trust while at the same time intensifying competitive rivalries.” The network organization of Silicon Valley ultimately resulted in greater capacity for innovation and the ability to adapt to adversity.

This report dissects the connections between the structure of an individual’s social network and his or her role in innovation activities, thus tying personal network dynamics to innovation at regional and organizational levels.

Networks View Individuals as Part of Larger Systems

Looking at the larger network situates individuals among their peers, families, friends, and social and cultural institutions, thus allowing us to observe various influences and exchanges among individuals—why, where, and how these take place and their

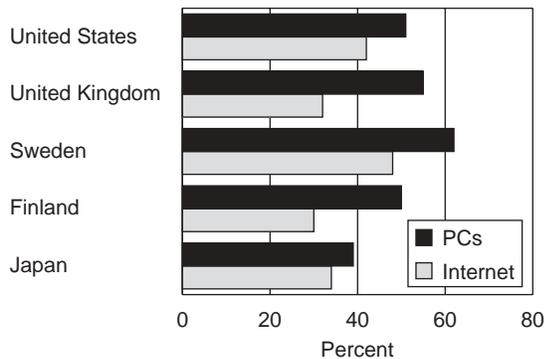
meanings in the individuals’ daily lives. The network perspective allows us to see individuals not as isolated entities, each with his or her innate sets of preferences and desires, but as individual nodes in a larger community in which desires, preferences, and behaviors are intricately linked to multitudes of interactions among members of the network as a whole. As with a real net, when one node is pulled one way, the rest of the network is pulled along as well. The study of social networks thus provides insights about the dynamics of interaction between individual choice and the larger community.

WHY ARE SOCIAL NETWORKS IMPORTANT TODAY?

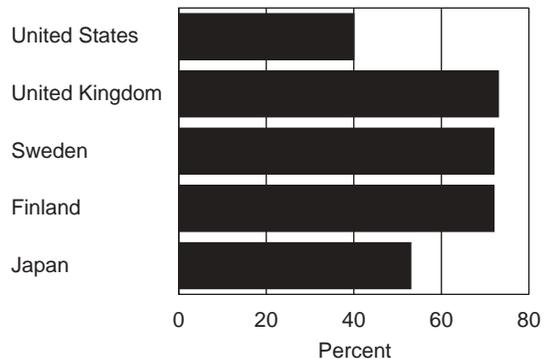
Today, abundant connectivity makes it possible for people to form relationships well beyond the traditional boundaries of neighborhood, family, school, and geography. People live in a communications-rich environment in which they are able to connect with others by myriad devices at higher speeds and in more locations and at greater distances than ever before (see Figure 2). Internet,

Figure 2
We Live in a World of Abundant Connectivity

Percent of households with PCs and Internet, 2000



Percent of population with mobile phone subscriptions, 2000



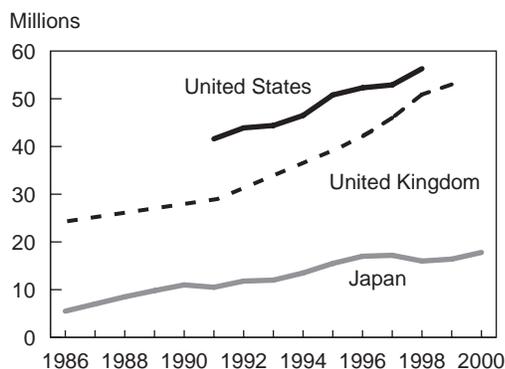
Source: International Telecommunications Union; Organisation of Economic Co-operation and Development; Japan Cabinet Office, *Statistical Handbook of Japan*, 2001.

ICQ, short-message service (SMS)- or Web-enabled phones, pagers, and many other devices and services turn anyone around the world with access to these channels into a potential communications partner for anyone else with similar access.

Such abundant connectivity is not only the result of the proliferation of communications technologies but also of increased personal mobility, which makes more places accessible and more face-to-face relationships possible in different places (see Figure 3).

It all works together. Increasing travel, migration, and connectivity put people in contact with many different worlds. Meanwhile, technologies enable people to maintain distant relationships, whether with the people back home, the people met on travels and migrations, or even people never met face to face. Many different worlds are connected at speeds and distances previously unknown.

Figure 3
People Are More Mobile, Increasingly Crossing Geographic Boundaries
(Number of people traveling abroad)



Source: International Passenger Survey, United Kingdom Office for National Statistics; Japan Ministry of Transport; Japan National Tourist Organization, U.S. Census Bureau, *Statistical Abstract of the United States*, 2000.

WHY STUDY THE YOUNG?

Nowhere is the shift toward abundant connectivity and its implications more profound than in the lives of young people. They are, in Margaret Mead’s words, the “natives” in the new world as they grow up in an extremely rich communications and media environment, distinct from generations before them (see Figure 4 on page 6). Because abundant connectivity has the potential to open them to influences and relationships well beyond the traditional physical boundaries of home and community, the current generation of young people gives us a glimpse of the future, helping us better understand how social networks are likely to evolve. The way this generation brings their social networks into the marketplace will have important implications for the different aspects of companies’ operations—research and development, innovation, communications, marketing, new product development, and human resources.

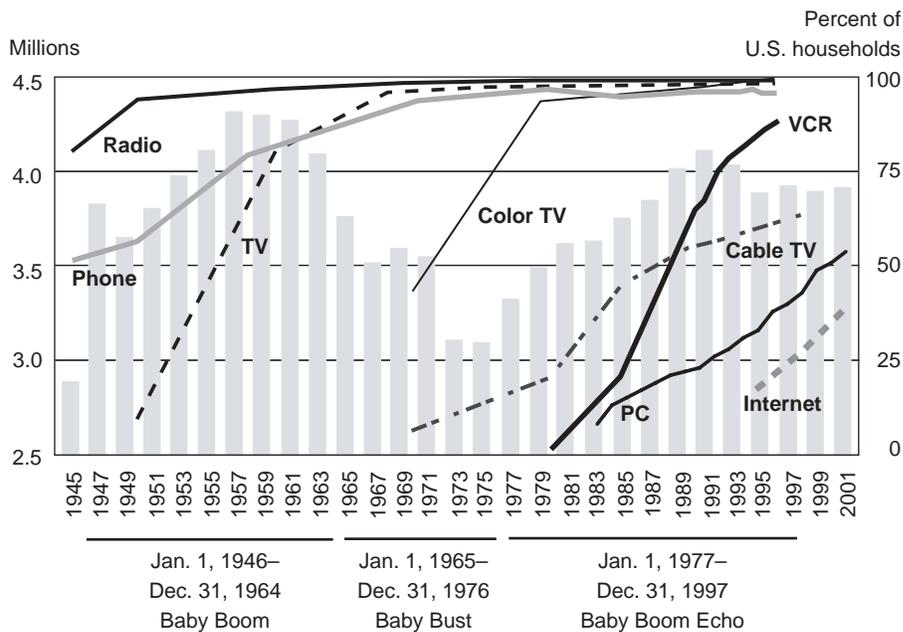
This report is divided into three parts, with three different takes on the ways social networks are changing the world and its marketplaces in the 21st century:

- Part I, “The Architecture of Social Networks” lays out the structure, process, and interconnections of today’s social networks.
- Part II, “Interaction of Social Networks and Domains of Daily Life,” describes how young people put networks to use in different domains of their lives.
- Part III explores the importance of social networks for business. In “Diffusion of Ideas, Products, and Services: Case Studies and Lessons,” we outline a framework for understanding the diffusion of innovations, define and describe the internal and external factors driving such diffusion, and present case studies of ideas, products, and practices that have successfully diffused from Japan. In

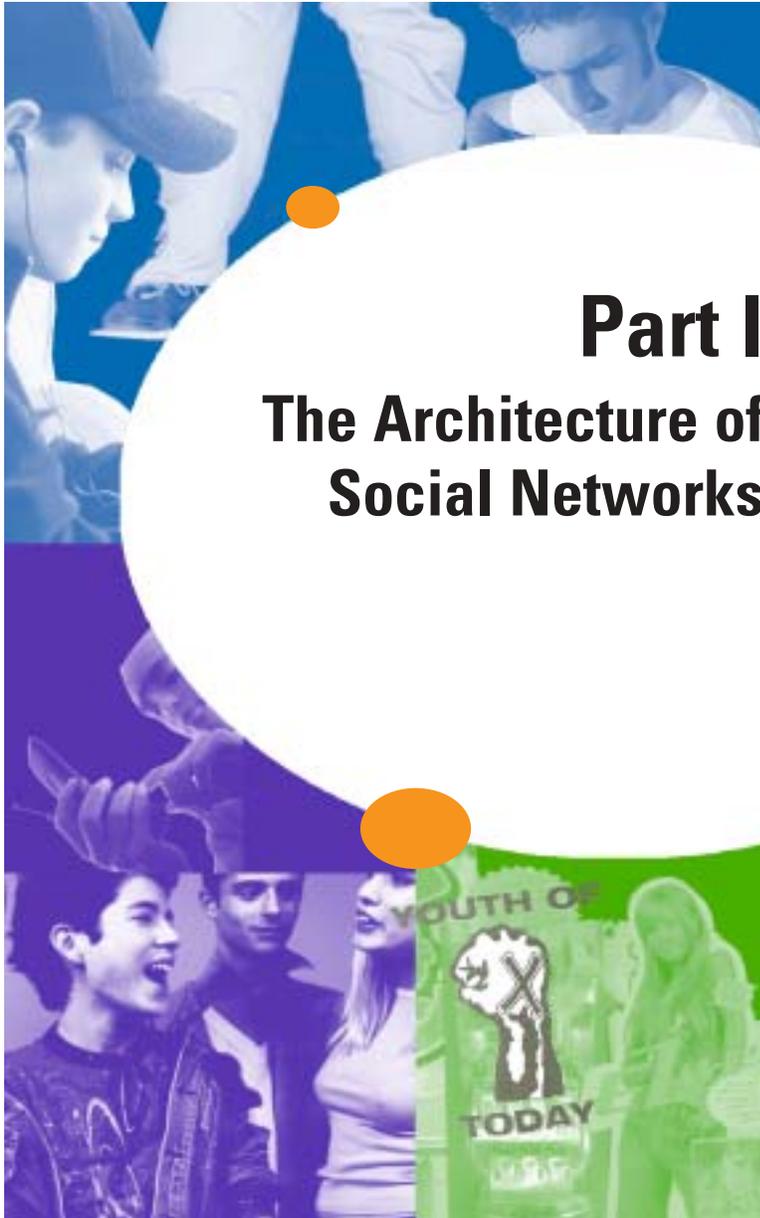
“Turning Consumers into Advertisers,” we explore “viral marketing” or the use of social networks for reaching consumers.

We wrap up the report with our key findings regarding the future of social networks and identify the implications of these for businesses. The report also includes three appendixes; the first is a graphic depiction of our framework for analyzing social networks, the second describes our research process in detail, and the third gives a brief biography of each participant in the study.

Figure 4
Youths Growing Up in a Rich Media Environment
 (U.S. penetration of technology, birth trend, 1945–2001)



Source: Institute for the Future, U.S. Census Bureau.



Part I

The Architecture of Social Networks

Part I

The Architecture of Social Networks

To know how social networks work, we must understand their architecture—how they evolve, what boundaries they cross, what kinds of relationships they consist of, what kinds of resources are exchanged, and what roles people play in them. In Part I, we describe the structure and processes of these important networks—how they are defined, organized, and managed; how far they reach; and what sustains them.



The Creation and Evolution of Social Networks

Social networks are formed well before we are aware that we even have them. Indeed, from the time we are born, networks spring up around us—based on the family we are born into, the places we frequent, the clubs we join, the schools we attend, the things we do, and the people we come to know. All of life’s routines, great events, and transitions affect the development and evolution of these networks—entering school, moving from elementary to middle to high school, participating in chat rooms, moving to another town, state, or country, attending social events, joining the swim team, going to college, studying abroad, or getting that first job. All these life-changing events have profound influence on the architecture and evolution of our social networks.

With every new encounter, connections emerge, linking an individual to defined sets of people, organizations, institutions, and communities, both on- and offline. Some connections are prominent in the network, while others lie latent. Few connections ever go away. Some exist without effort, and others require work. Some may be activated and deactivated over time, which requires careful management strategies. In the end, many factors influence the creation and evolution of a social network, including personal interests, mobility between places and institutions, and the actions of other people—parents and siblings, extended family, peers, friends, teachers, and other important members of the network.

PARENTS' CHOICES BOUND EARLY NETWORK FORMATION

Each life stage is filled with its own experiences, transitions, and relationships. At younger ages, social networks are more closely bounded, and their development and evolution depends more on the actions of others than oneself. Networks begin to emerge based on the places or institutions in which adults (usually the parents) place the child.

For example, the network of Moira, a 13-year-old from Silicon Valley, revolves around a few settings such as her school, her neighborhood, and her parents' community of friends. For Moira, networks have sprung up around her in the environments in which her parents have placed her or from interactions her parents have facilitated for her from a young age—the middle-class neighborhood in which they live, the Catholic elementary school she has attended for eight years, play dates, social occasions accompanying her parents, and so on. Moira is still a young girl and her network is largely shaped by her parents' choices.

In fact, her parents are guiding the evolution of her network in a fairly conscious way. For example, they host parties that bring together a stable core of

families who have interacted for over a decade. Both adults and kids attend, including friends from work, school, church, and former and current neighbors.

Networks begin to emerge based on the places or institutions in which adults (usually the parents) place the child.

One reason for hosting these events is that the family likes parties, but there is a more instrumental reason as well. Moira's parents are consciously building a network that provides a backup infrastructure for Moira's support. Moira's father and mother are both extremely active professionals who head their respective organizations. They never know when they might need someone to help them out, and they have consciously developed this kind of social network to provide backup for Moira: last-minute supervision, a companion for social or public events, an emergency ride home from school, and anything else she might need on the spur of the moment.

Similarly, the network of Georgina, a 17-year-old born in Ukraine and living in Sweden, revolves around her family—in the neighborhood where she and her family live in Stockholm; in the school where her mother enrolled her; and in Canada, where her father lives with his second wife and family.

Before Georgina began high school, she spent her elementary and junior high years in a Jewish school in downtown Stockholm. This school—her mother's choice—enabled her to make friends with students of similar background (Jewish and Ukrainian). She still stays in touch with a few girls from this school, but aside from these friends, her life in Sweden has very little Russian influence. She divides her time between school, which she gets to by bus; home, where she hangs out with family and friends; and cafés in downtown Stockholm. In the summer, however, things are dif-

ferent. Georgina goes to Canada to live with her father and his family, where only Russian is spoken and most of the surrounding community consists of friends of Russian descent. So in the end, wherever she lives, Georgina has little say about the way these parts of her networks are configured—they are simply a given.

The network of Rick, a 17-year-old high school student and Straight Edger (a hardcore music fan who has sworn off tobacco, alcohol, drugs, and promiscuous sex) of Nigerian British and Midland British background, includes multiple relationships developed by his parents, some active and some latent, which might be activated by Rick as the need arises. In fact, his parents have essentially built most of his network except his social and music friends. Through his parents, Rick has connections to several other British families who consider him “family” and several American families in California that do so as well. Through his mother, an academic, Rick also has a rich latent network in the London university and art societies.

TEENS IN EUROPE AND JAPAN SPREAD THEIR WINGS FASTER THAN U.S. TEENS

Although their parents create much of their networks, teenagers in Europe and Japan begin building their own parts of their networks earlier than their counterparts in the United States. For the most part, teens in Europe and Japan live in regions with extensive systems of public transportation and as a result have more freedom to get around without their parents’ help and thus to form independent relationships.

Rick relies heavily on the London subway and bus systems to get around town and attend music gigs on his own with friends. At most venues, Rick and his “crew” bump into other crews or circles of friends. Occasionally, these location-based interactions result in what Rick calls “proper” friends—friends that are seen outside the context of music

as well. Rick relies on these venues as key resources for expanding his social network independent of his parents.

Young teenagers in the United States, on the other hand, have to rely on parents, other adults, or older siblings for access to many places and people. For example, for Cindy, a 16-year-old Taiwanese American living in Silicon Valley, most of her activities relate to school, shopping with her mother or friends, or hanging out at her intimate friends’ hous-

For youth in suburban America, lack of accessible and easily available transportation is a limitation for enlarging social networks.

es, or sports practices. She doesn’t drive yet, and must rely on her mother or friends to get her where she wants to go. Several of her friends have summer jobs, a good way of extending their networks, but Cindy hasn’t managed to find a job she can get to by public transportation. She is currently saving money to pay for car insurance and hopes her mother will buy her a car once she learns how to drive.

Similarly, the primary hangouts of David, an ethnic Chinese-Vietnamese 15-year-old interested in the Japanese language and ROTC (Reserve Office Training Corps), are the houses of friends within walking distance of school and the local park. He can use public transportation to get to the mall, but otherwise relies on family and relatives to drive him around.

Like his peers in Silicon Valley and much of suburban America, David’s opportunities for enlarging social networks are bounded by lack of accessible and easily available transportation.

TECHNOLOGY EXPANDS NETWORKS BEYOND PARENTS

There is another way to expand networks, however, one to which more and more young people are turning: technology. Information and communication technologies, particularly mobile phones, e-mail, chat rooms, instant messenger services, and online communities like LunarStorm in Sweden and Bolt.com in the United States (see text box), allow young people to break out of the boundaries set by others. Like public transportation, communication technologies provide youths with the opportunity to expand the boundaries of their networks, but to an even greater degree. Indeed, these technologies allow young people to pursue relationships anywhere in the world in a variety of domains—music, fashion, literature, politics—or simply for the sake of fun and adventure.

For example, technology looms large in Moira's network, centered on AOL's Instant Messaging (IM) service. Most of her friends IM (she has nearly 100 identifiers on her buddy list), and she spends 2 to 6 hours a day on the activity.

Most of the messaging is quite trivial, as Moira herself confides—the typical kind of exchanges among girls and boys this age. She says they mainly talk about people, but claims they don't gossip because it is “all true.” Some of the exchanges take place exclusively online—she doesn't even know where all the people in her network live. However, Moira is not living in some sort of detached virtual universe, entirely cut off from face-to-face interaction. Like most teens her age, online social interaction often results in face-to-face exchanges. Moira's conversations on IM are essentially a second shift of school and are often continued the next day face to face.

For Rick, the 17-year-old British Straight Edger, technology and the Internet are critical to expanding his social network. His straight edge persona is cultivated face to face with friends and in venues across the London urban landscape. But he also lives it

online. Like Moira, Rick uses AOL chat rooms and instant messaging extensively. With AOL, he accesses online communities interested in hardcore music and has made several friends online whom he has never met face to face. When asked whether they should be considered part of his network, he said, “Yes!” He also includes other Straight Edge youths who identify themselves simply by their handles—that is, an “X” before and after their name or another cue such as name of a Straight Edge band. During observation, Rick was often on his Macintosh answering e-mail, monitoring the conversation in his favorite chat room, and sending IMs to his friends.

FORMING INDEPENDENT NETWORKS IS PART OF GROWING UP

Networks evolve one relationship at a time, one relationship, or set of relationships, grafted on top of another. Most of the young people we interviewed extended their networks by grafting onto their parents' networks and those of other adults. (By “grafting” we mean taking a segment or branch of someone else's network and adding it to your own.) For younger kids, such grafting is not conscious—relationships just happen in places or around people in their parents' circles. With age, grafting may become more deliberate, as youngsters begin to realize the value of such relationships.

For example, Luis, a 20-year-old who was born in Argentina but who has lived most of his life in Silicon Valley, is attending college. He is still not sure what he wants to major in and has plenty of time for extra work. He helps his mother, who runs her own headhunting business. His mother's work network involves several partners, who are close friends of the family and familiar to Luis. Because he has good IT skills, Luis has begun to make connections by playing a role in his mother's network—he offers both partners and clients IT support. He is

learning business skills by observing his mother, but also first-hand in his venture as IT support for the network.

Rick, a 17-year-old Straight Edger, will soon start university. Like many European young people, however, he wishes to take a term or two off between high school and university—typically called a “gap” year. To learn new things in a different environment, he is exploring his parents’ network for internship possibilities in Silicon Valley.

As people mature and experience more transformations, they move away from relationships bound-

ed by parents’ and other adults’ choices to develop their own distinct social networks. This is not to say that they stop grafting onto other people’s networks—grafting is an important strategy for network expansion throughout the life stages—but it does mean that their own networks assume unique forms and characteristics, not so much driven by the choices of others but by their own choices and life circumstances. In a way, the process of becoming an adult may be viewed as the process of developing one’s own unique social network architecture, distinct from that of one’s parents or other important adults.

Online Communities for Youth

Internet communities targeting young people (typically ages 15 to 24) have grown rapidly in recent years. By exchanging basic demographic data such as age, sex, and location (sometimes product and service preferences as well), members can choose a “nickname” that gives them access to the community’s



activities—free e-mail, personal Web sites, public diaries, interest and lifestyle-based discussion groups, and the like. Bolt and LunarStorm are two good examples. Bolt, www.bolt.com was founded in 1996 and has expanded beyond the United States to Canada, the United Kingdom, and Australia and now has over two million subscribers. Bolt.com integrates Web and wireless communica-

tions tools enabling young adults to interact in a relevant member-created environment. The Swedish youth community www.lunarstorm.se was founded in 2000 and has nearly half a million active members. Its focus is on Swedish youth, with over half of all Swedish teenagers as members, and is now expanding to other Scandinavian countries beginning with Denmark. These online communities facilitate discussion from dating and politics to music. For marketers, these online communities represent important gateways for establishing a dialogue with teens and young adults.



Naomi, a 27-year-old Japanese businesswoman, is a case in point. In Tokyo, she is systematically nourishing her network. She likens herself to a fish, in the sense that she doesn't settle or stand still, but always keeps on moving, swimming, navigating, and transforming her network. During the years she has spent with her first employer, she has relied heavily on older colleagues to introduce her to their established networks. As a result, she has been surrounded mainly by older people and has been able to learn from those with more experience. Naomi describes how she has now reached a point of self-confidence, and desires to create her own professional links, preferably with younger people. She looks forward to building new platforms of relationships in her areas of interest. In fact, she sees her relationships with older people as the social currency she will use to move out on her own, to build her own network connections.

He [her older mentor and colleague] has a very good network, but that's his network. And [his network] is much, much older than my generation. I want people who are younger. And while I appreciate meeting, you know, these established gurus, I'd also like to meet people who are up and coming—in new kinds of business. Because that's what he did probably when he started his own network.

Naomi, 27, Female, Tokyo, Japan

EXPRESSIVITY TURNS INTO INSTRUMENTALITY AS NETWORKS MATURE

As people grow from childhood to adolescence and into young adulthood, their networks not only grow larger but change in nature. When teens begin to choose their own networks beyond the ones their parents have set in place, they do so primarily to express themselves, to

create friendships that are a reflection of “who I am.” Their network is primarily about emotional content and the search for identity. As teens grow into young adults with careers and such to think about, the network turns from being purely expressive to becoming instrumental as well—a tool for accomplishing things. The young people we interviewed showed great variation in when they realized the value of making their networks more instrumental. Naomi, for example, is highly conscious of this instrumentality. She views key people in her network as opening doors into new worlds.

Most of them [people in the network] are enjoying what they are doing. To me, these people serve as doors to new worlds that I would not know otherwise. If I were just left on my own ... my world would be this size, small. But through these people, they opened the doors for me to a totally new world. I enjoy talking to them and probably they enjoy talking to me. That way, I get to know things much faster.

Naomi, 27, Female, Tokyo, Japan

For Naomi, then, the breadth of her network gives her a feeling of self-worth, of empowerment—that she's in control of her own destiny.

Bernard's network is also a mixture of instrumental and expressive relationships. He has created surrogate moms, brothers, and sisters all over the San Francisco Bay Area. Yet Bernard also wants to create his own company, and he sees the potential for almost everyone in his network to play an instrumental role in Bernard, Inc. As a result, he has assimilated everyone into his business plan. For Bernard, every connection is a potential partner, investor, employee, client, source of ideas, expert, and so on. For example, Bernard is teaching one of his best friends from French high school, someone

he considers a brother, C++ and Java programming in order to bring him up to speed for the role he will play in the company. Like most residents of Silicon Valley, Bernard blurs work, school, friends, family, and entertainment—that is, he combines expressivity and instrumentality throughout his network.

Another participant in our study, Ewen, a 23-year-old design engineer from the United Kingdom, made an interesting distinction among his relationships. He recognized that some of the relationships in his network exist simply because of frequent interaction, for example, with his colleagues at work. “Work connections are not as strong as friendship connections,” he said, “because they’re not chosen, and I don’t have ownership over them.” He calls these relationships “artificial” networks as opposed to the “natural” networks of friendships. He considers these artificial networks to be more instrumental and less expressive than his relationships with friends. However, this distinction gets blurred when he goes to pubs with his work colleagues. On these nights, instrumental relationships can feel more expressive.

Ewen’s distinctions are important because they show the boundaries he makes among the relationships in his network, and how those boundaries are crossed, that is, how instrumental relationships can become more expressive and vice versa.

Work-social occasions are very often artificially sort of prompted networking events—you know, like trying to encourage networks, which naturally didn’t occur ... people have to actually like each other. ... I think you don’t have people in your network that you don’t actually like ... pushing people together because of circumstances doesn’t necessarily mean that you consider them part of a network. I wouldn’t include people that I had a

particular function or use for ... in [my] network. Maybe other people would think, “Well, that person—I don’t really know them that well or like them very much, but they’re useful because of this and that.” But I wouldn’t really think in that way. But I think if you know them already, it makes it easier for the function. So if it’s certain people at work, those people that I’ve met in the pub and talked to a number of times—you work with them and then it does make it easier.

Ewen, 23, Male, London/Glasgow, United Kingdom

Thus, while for Ewen liking someone is a prerequisite for including him or her in the network, once that link has been established, the other, more instrumental (functional) side of the relationship can emerge. This is how Gary, a 25-year-old teacher’s assistant and musician originally from Eugene, Oregon, and now living in Silicon Valley, has found both a job and a band to play in. He explained how people enter his network.

You know if you feel comfortable talking to someone and they don’t feel awkward around you and they don’t make you feel awkward about yourself ... someone who has a similar outlook or similar influences. It all leads to a vibe ... some people you just connect with more than others.

Gary, 25, Male, Silicon Valley, United States

For Gary, the expressive and emotional connections are important in establishing relationships. The “vibe” he refers to is the expressive fit he looks for in relationships. This was true when he encountered the people at the school where he works today. He describes the fit he found.

I grew up in Eugene, Oregon, like a big university area of Eugene. And it's a very liberal community. And I grew up with a bunch of trees around. I grew up on a street that didn't have sidewalks, and there were dogs running around. And a lot of my friends' parents, and a lot of the adults I came into contact with, were pretty liberal in politics and socially very responsible, I would say—pseudo-hippie ideals. The school I work at now feels like home to me. I mean I still miss Eugene, Oregon, partly because of that ... and then I come to work at this school and it's a place with all of these trees and people are free to express themselves, and its familiar and comfortable.

*Gary, 25, Male, Silicon Valley,
United States*

Gary's expressive stance toward his network and relationships turned instrumental in the form of the job he got at the alternative school where he now works. The network is becoming instrumental in other ways as well. A colleague, a teacher in his 50s, has helped Gary find and recruit musicians interested in forming a band. As a result, Gary's band includes a few of his own friends from college, a bass player found on Craig's List (www.craigslist.org)—the San Francisco area, Web site featuring countless classified ads—and people he works with, many of whom are older but share the same ideals or “vibes” he looks for in relationships. Gary has shifted these relationships to other interests as well.

We're really lucky I guess because we [the band] all work at the same place—at the school. Except for one.

And just because of that, we're on a similar page, maybe not the same page, but a similar page. We do things outside the context of the band and that's what brought us together.

*Gary, 25, Male, Silicon Valley,
United States*

None of the participants would construe their networks in strictly instrumental terms—they didn't create any of these relationships for purely instrumental reasons. Having an emotional connection is a prerequisite for a relationship. But once that condition has been satisfied, the relationships are often put to instrumental use. To quote Ewen, “I wouldn't have a relationship with someone just because I can use him, but as long as I like the person, I might turn to him for things.” In this way, instrumental and expressive needs become intertwined as social networks evolve from those of children to those of adolescents to those of young adults making their place in the world.

WHY IS THIS IMPORTANT?

Companies need to understand the nature and evolution of social networks with age and through life stages in order to be able to meet the needs of different networks. The networks of young people serve primarily expressive purposes, thus they need infrastructure and tools that allow for creative expression. The process of establishing your own networks, independent of the adults in your life, is an important part of becoming an adult. With age, boundaries between expressive and instrumental blur as every relationship whether a friend, a family member, or a mentor, can also be put to use to accomplish specific instrumental goals. Thus the network needs of people at different ages and life stages may differ substantially.



Networked Organization

If a social network is a web of relationships that evolves from the time we are born, then each relationship is a node in that network—a point of connection for any number of other relationships. How are these nodes organized to form networks? The participants in our study have given us important clues.

The young people we interviewed had different ways of talking about the nodes in their networks—some nodes were described as individuals, others as clusters of people. In the case of Luis, for example, a 19-year-old of Argentine descent in Silicon Valley, his network consisted mainly of family groupings—the Rodriguez family, the Bell family, the Kerr family. Straight Edger Rick’s network is dominated by “crews”—the Harrow crew, the American crew, the band crew. The network of Masa, a 23-year-old Japanese college student, consists of various university, high school, and special interest clubs. And the network of Bernard, the French engineering student in Silicon Valley, comprises individuals but also groups of university friends and surrogate families.

How do these relationships emerge? With the help of our participants, we have determined that nodes crystallize around eight key dimensions that serve as platforms for building relationships (see Table 1).

FAMILY

Family is the most basic organizing principle of anyone’s network, most likely because family ties are omnipresent, enduring, and cross-cutting. Families are unique in the formation of net-

Table 1
Key Dimensions for Building Relationships

- Family
- Values
- Interests
- Work
- Ethnicity and cultural identity
- Institutions and organizations
- Geography
- Place

Source: Institute for the Future

works in that people are born into families and the sets of relationships they entail. They don’t have to work to acquire them (although, as we point out in Part II, over time people often redefine what family means for them).

Mike, a 24-year-old living in Silicon Valley, demonstrates the relative permanence of family ties. Mike’s family is from Lebanon and Cyprus. Although he still has family in Lebanon, he doesn’t consider them to be a part of his “immediate network” while he is in Silicon Valley.

They’re not part of my immediate network. [But] they’re part of my immediate network when I’m there [in Lebanon]. When I’m there, they are my network. When I’m here, I lose this whole network and I join another one.

Mike, 24, Male, Silicon Valley, United States

However, when Mike visits Lebanon, he immediately resumes his role as part of the Lebanese family network. He doesn’t need to work on it during the year, he doesn’t need to communicate with them. Even the act of notifying his Lebanese relatives that he will be visiting is outsourced to Mike’s parents. As soon as he lands in Lebanon, however, he automatically becomes part of the family network again.

Interviewer: Then you could say you start linking that network only when you know that you will go there.

Yeah, well, when I’m there.

Interviewer: And then when you say, okay, I will come and see you in a month, you would communicate by ...?

Sometimes I wouldn't even communicate. My parents will just let them know I'm coming.

*Mike, 24, Male, Silicon Valley,
United States*

Similarly, Luis, who is of Argentine descent but lives with his parents in Silicon Valley, is not that close to the family in Argentina or other family on the east coast of the United States. However, he immediately became part of the extended family network when his uncle, aunt, and cousin moved to the United States.

They come by probably once every couple of days, if not every day. Always doing us favors. My cousin Martin is letting me borrow his jet ski this weekend. So very giving. If I needed anything, I know that they would jump for it. They wouldn't even hesitate. If I needed a thousand bucks, they would find a way to do it, you know.

*Luis, 20, Male, Silicon Valley,
United States*

To Naoko, a 19-year-old Japanese university student, her family is very important and is the basis of many relationships.

Not only with [my sister], but I'm also close to all of the family. And I wonder why—maybe because we talk to each other about everything, and we ask for suggestions. We just get along.

*Naoko, 19, Female, Yokohama,
Japan*

In the end, although family connections may be the easiest part of any social network to enter and re-enter, they are also the most lasting—most people can easily activate and deactivate them at will.

VALUES

Whether a young person believes in antiglobalism, vegetarianism, the no logo movement, or free software, sharing values serves as an important glue binding young people together. This has always been the case to some degree. The difference today is that the Internet and other modes of electronic communications make it orders of magnitude easier for the young to find and build relationships with those sharing the same values all over the world.

The Straight Edge movement is a strong base for many of Rick's relationships. This network is predominantly virtual for Rick, 17, since only one of his friends in London is also a Straight Edger. Indeed, most of his interactions with fellow Straight Edgers are through the AOL Straight Edge chat group and other online communities. On AOL, Rick participates under a name that clearly marks him as a member of the movement, that is, with an "X" before and after his name. He logs on several times a week and chats with his online friends about upcoming gigs and bands. Many of these relationships remain online, although occasionally he meets up with online friends in the real world at gigs or concerts.

A good part of Bernard's network is also based on shared values. Bernard is a strong adherent of the Free Software Movement, whose members share several fundamental values: that the Net should be available to everybody; that all users have freedom of expression on the Net; that work requires passion and the commitment to create something peers find valuable. It is the ethical duty of adherents of the Free Software Movement, often referred to as "hackers" (not the criminal kind, which true hackers call "crackers"), to share their expertise by writing free software and facilitating access to information and computing resources wherever possible.

For Bernard, an expression of these values is his desire to work for Apple Computer and to support

non-Microsoft platforms. The Apple connection, growing out of his fundamental values, has become a platform for developing other relationships. For example, he registered as a developer on an Apple mailing list and became a member of the Apple Developer Connection Net Membership. Because of this, he was invited to a developers conference at MacWorld, where he met G., who turned out to be a manager at Apple.

The way I met him is because I was lost and didn't know where to go. I went to see them and I asked, "Do you guys know where it's supposed to be?" I introduced myself and we started speaking and they looked like two pretty friendly individuals.

Bernard, 20, Male, Silicon Valley, United States

Bernard contacts G. infrequently, but when he gets a business idea he does not hesitate to call or e-mail. Says Bernard, "He's manager of developer relationships and tools, which is pretty good. Good here means 'Connections'. He knows a lot of people." Clearly, G. is an important resource who shares fundamental values with Bernard.

INTERESTS

Interests or hobbies, be they music, paintball, theater, computer games, design, anthropology, Japan, car racing, or fashion, are important principles on which to build parts of a network. As in the case of values, the Internet makes connections to others with similar interests and hobbies easier than ever before.

The network of 13-year-old Moira, for example, includes a cluster of "theater people"—kids who participate in school-sponsored drama programs and youth summer theater camps. Moira has attend-

ed the same Catholic school from kindergarten to eighth grade, and much of her life centers around that school. Theater constitutes a major part of her extracurricular activity, and expands the reach of her network into many other schools, including public schools.

Anyone involved in theater, either at school or theater camp, is a candidate for Moira's network. She meets these friends in summer plays and year-round courses, and they are clearly the basis of her social life. Within the cluster, a core group (to which she refers as "us") attends many of these activities, with others joining in sporadically. In addition, theater chums from different schools invite Moira to other events. For example, she goes to the school plays or dances of her friends, and attends their birthday parties. She meets some of their other friends at these events, and they all get swept into each other's networks. Indeed, she met her first boyfriend this way: he was a friend of a theater camp friend who tagged along to a social event.

For Gary, a 25-year-old from Eugene, Oregon, shared interests are also the most important component of key relationships in his network. Music in particular is a big filter for him, since it communicates shared values, shared interests, a shared worldview. That's how Gary hooked up with Alistair, a housemate, coworker, and fellow band member.

We're close friends. We come from very different corners of the country. He's Jewish and grew up in Long Island. That is a distinct and different culture than the hippie, liberal, Eugene culture. So we were very different when we met—and we're still pretty different. But we have overlapping interests.

Gary, 25, Male, Silicon Valley, United States

WORK

Since once most people get out of school they spend more time working than doing anything else, it makes sense that a good portion of anyone's network is organized around the workplace. This is indeed the case for Naomi, a 27-year-old Japanese woman, who works in one of the largest advertising companies in the world. Such a company provides multiple opportunities for her to meet and develop relationships with interesting people from different walks of life—artists, designers, academics, entrepreneurs, journalists. Naomi actively uses her work relationships to build and expand her social network.

Besides the groups of designers, anthropologists, and business people Naomi works with directly, she meets other people when conducting interviews for projects, giving presentations, and attending conferences and workshops. That's how she met Mr. Masumoto, who introduced her to a range of different networks, including the Financial IQ network he founded to teach American investing principles in Japan.

Ewen, a recent college graduate who has been working for an architectural firm in London for eight months, distinguishes work from friendship connections. For him, the former are weaker because he hasn't chosen them and doesn't have ownership over them. Following a London tradition, however, his work does have a social component in the pub nights that take place several times a week, where he meets people from other design companies and other departments in his own company. The colleagues he meets there are usually older than he is and higher up in the company, so that going for a drink with them after work is good career networking. At the same time, these nights tend to blur the distinctions between colleague and friend. Ewen submitted a project for a competition in partnership with one of the colleagues he met on a pub night. As such connections deepen, some colleagues cross over to the friends network.

P. is actually quite high up in the company. I know him from the pub, which makes it a bit strange. ... And he had an idea that we entered into a competition. So I did the drawings and models and stuff. And then he stuck it on a sheet the next day and it was the closing day for the competition. His idea didn't get a prize but it got a recommendation. So that was very interesting I might kind of work with him a wee bit, do some things outside of work—because I get on with him anyway.

Ewen, 23, Male, London/Glasgow, United Kingdom

For Arthur, a 25-year old Finnish entrepreneur living in Helsinki, work overlaps many other domains of his life. Five years ago, Arthur and his close friends worked at the same multimedia company and studied together in high school. Working was mostly a hobby and work and personal relationships were easily intermingled. Today, the same friends have moved on, some becoming independent consultants like Arthur, others joining more established companies. Nevertheless, like Apple's diasporas or other important diasporas in Silicon Valley, Arthur's tribe of friends from the startup has transcended work relationships to become an important part of his social network, serving both expressive and instrumental purposes. In fact, much of Arthur's socializing happens in the work context, like product launches and company parties, which become key venues for recruiting new members to his network.

As a result of these relations, new projects are constantly emerging that can turn into paid jobs or grow into fruitful associations, like the new media space Arthur founded with two of his friends who were also colleagues. These associations in turn provide constant opportunities to meet new people

that hold even greater opportunities for business relationships.

ETHNICITY AND CULTURAL IDENTITY

Ethnicity and culture play a strong role in creating network relationships. For example, relationships deeply rooted in common Vietnamese-Chinese and larger pan-Asian identity permeate 15-year-old David's network, including many of his interest-, school-, and institutional-based clusters of relationships. Though he was born in the United States, David's parents are minority Chinese from Vietnam, and they speak Mandarin and Vietnamese. David's network includes many Vietnamese- and Chinese-speaking relations, including his family, young Asian boarders whom David's mother enlists to tutor him, and friends in high school who are Vietnamese-American and with whom he participates in a Japanese language program.

An obvious sign of David's self-identification as Asian-American is his choice of online identities, which all begin with "AZN." David's individual ethnic identity permeates his network of relationships and overlaps with other groupings in the network—family, school friends, ROTC, computer gaming partners, and paintball friends. The networks of David and Cindy (another Vietnamese-American teen in Silicon Valley) overlap substantially, and share an Asian-American peer network dominated by particular institutions and activities—sports, advanced placement college-bound courses, and the Naval Junior Reserve Officer Training Corps (NJROTC)(see text box).

Sometimes cultural identity is even more important for expatriates. Samuel, one of Bernard's friends was raised in France, where he also went to school. His mother is American and his father Iranian. In France, Samuel went to an international school where most of the students were from somewhere else. According to Samuel, "it's like you are not even living in France." He simply wasn't French

enough to be accepted there. Once he came to Silicon Valley, however, the French connection became more important.

And then you come here and you're more with French people than you were in France and you're like, "What's wrong with this?" And these people that you wouldn't hang out with at the school ... you're forced to hang out with them.

Samuel, 20, Male, Silicon Valley, United States

For Samuel, being French had little value in France. In Silicon Valley, however, being French is an asset that serves as a platform for building relationships with others who share the same culture or nationality.

INSTITUTIONS AND ORGANIZATIONS

Institutions and organizations such as schools, universities, churches, community groups, and school clubs provide obvious platforms on which to form network relationships.

For David and his friends, the NJROTC (hereafter referred to as ROTC) provides a set of relationships in the larger community, access to an existing network of veterans and other military communities, and a set of structured and unstructured activities with peers. David is in line to be a student commander next year, and competitions between different regional ROTC marching drill groups play a big role in structuring his friendships and time. The individuals in the ROTC cluster are highly organized into roles—master chief, commander, sergeant—but these same individuals cross the ROTC boundary to become lunch friends and gaming companions. For example, David met his friend Victor at school through ROTC. The friendship has progressed beyond the ROTC connection so that Victor is now a friend "who can be trusted." Victor and David organ-

ize a group of young men who play paintball and they often play computer games with each other and others in the extended network.

Educational institutions play a central role in establishing networks. Moving to a new school or class exposes the young person to a wide range of potential relationships as well as the networks of others. Primary schools, high schools, and universities are the cornerstones of relationship building for most young people. Many relationships formed at these institutions last much longer than the time spent there. For Georgina, the 17-year-old in Stockholm, her group of friends from high school is the basis for much of her social interaction—at school, on weekends in cafés, and even on vacations. They have traveled together to Cyprus, for example, and places within Sweden. First the group consisted of friends from the Jewish high school she attended; later the group came together around

friends from the high school she attends now.

Similarly, the closest friends of Frank, a 25-year-old Swede, are all from university. The group consists of about eight guys who do almost everything together—travel abroad, engage in school and entrepreneurial projects, help each other find work, give advice on relationships and feedback on ideas, play hockey, and just hang out in cafés or each other’s apartments. Frank describes the group as giving him “inspiration and support.” Although Frank has traveled and lived in many places, he has stayed in close touch with these friends.

The networks created at such institutions can be so important that people go a long way to make sure they find the right ones. Masa is a Japanese student about to attend university in Southern California for one semester; he sees this as an important step in expanding his network.

The Naval Junior Reserve Officers Training Corps

The Naval Junior Reserve Officers Training Corps (NJROTC) program was established in 1964. The program is conducted at accredited secondary schools throughout the United States, by instructors who are retired Navy, Marine Corps, and Coast Guard officers and enlisted personnel. The NJROTC curriculum emphasizes citizenship and leadership skills (like how to motivate others), as well as U.S maritime heritage, the significance of sea power, and other naval topics such as the fundamentals of naval operations, seamanship, navigation, and meteorology. Classroom instruction is augmented throughout the year by community service activities, drill competition, field meets, flights, visits to naval activities, marksmanship training, and other military training. Uniforms, textbooks, training aids, travel allowance, and a substantial portion of instructors’ salaries are provided by the Navy.

Source: <http://www.njrotc.navy.mil/whatisnjrotc.html>; <http://www.usarotc.com>.

I would like to make friends that I can still keep in touch with and visit even 10 to 20 years later. I would like to make good friends since I've only lived in Japan until now. This is going to be a good opportunity to meet people from different cultures. People who grew up in different cultures have different values. I would like to see those kinds of people. I think I have to respect different values [from different cultures] even though I might feel strange. It's a good opportunity to experience that.

Masa, 23, Male, Yokosuka, Japan

GEOGRAPHY

A connection or rootedness to a specific geographic region is often an important dimension informing network relationships.

Barry, 17, who lives in Silicon Valley, divides his network into three categories. There are his close friends—several boys from his elementary school. They now attend another school, but live close to him—they are literally his “close” friends, geographically and emotionally. Second, he has a group of close school friends, and then third, not-so-close school friends. School friends move between the close and not-so-close categories, but he says he keeps both separate from his geographically close friends. Part of this is familiarity: his core group of friends is stable and long term. It's also easier to do things at the last minute with friends who live nearby, especially on weekends.

Simone, an archeologist and one of Bernard's (the 19-year-old French student in Silicon Valley) surrogate mothers, has a strong connection to Tahiti, which serves as her platform for building relationships with others who share that connection. In fact,

her connection to Bernard is rooted in Tahiti—Bernard's father lives in Tahiti and knows many of the same archeologists and anthropologists in French Polynesia that Simone knows.

[Bernard] just sort of landed on my doorstep. It was a connection in Tahiti. He was going to school here and somebody has said, “If you don't find a place ... just call Simone.”

*Simone, Bernard's fictive mother,
Silicon Valley, United States*

For Gary, Eugene, Oregon, continues to serve as a platform for many of the relationships in his network, even in the San Francisco Bay Area.

Interviewer: A lot of people moved out here.

I know, yeah I got very lucky. A lot of people moved into my circle.

Interviewer: And they have something in common?

Like, Derek—I've known him since I was four. We've been best friends our whole lives. And H. and all these guys, they're all from Eugene.

Interviewer: So all of these people are from Eugene?

Yeah. Derek is from Eugene, so is P. Derek lives in San Francisco. He taught at the school I work at last year. P. lives in Palo Alto.

Interviewer: And how do you know him?

Through Eugene, yeah we went to preschool together.

*Gary, 25, Male, Silicon Valley,
United States*

PLACE

Places that bring people into frequent physical contact become filters and platforms for relationship building because they signify a common set of interests or values. Rick, for example, attends gigs in certain locations around London. That's how he meets some of his friends.

Yes, we just get as many people as we can to go to gigs. That's how we met the Harrow people. I met them because we just went to the same gigs.

Rick, 17, Male, London, United Kingdom

Similarly, Georgina became close friends with a young woman from school because the two live in the same neighborhood and see each other frequently. They met at the bus stop and after a while recognized each other and started talking. Now the two commute together, go to each other's homes after school, and hang out. According to Georgina, at first they had different interests, "but now since we are so tight, our interests have kind of merged. We see each other so much that now we share most interests."

... we hang out 24/7 and it's because we live so close to each other. It's almost like living together ... Sometimes we talk on the phone, but it's more like to confirm something, not to discuss.

Georgina, 17, Female, Stockholm, Sweden

Anne, a 20-year-old studying fashion design in Helsinki, provides a good example of how place facilitates social interactions.

Virpi's apartment is right across the street and her window is opposite to mine, so we can see each other from our windows. And actually I was working in this cafeteria some time ago and Karen, a friend from work, knew Virpi distantly. Then we had this party with all the people from work and we were going out to a nightclub when K. suggested that we would go see Virpi on the way, as she lived nearby. I was like, "You mean there are other people like me living on this street?" And Virpi was as surprised as I was to find out that somebody else was living on that same street. And then later at the bar we were both so excited, like, "We're neighbors, we're neighbors!" I had to go to work the next day and the others came to spend some time at the cafeteria where I was working and I gave Virpi my number. But before she had the chance to call me I had already put a note on my window saying, "Hi Virpi" and then she called me. I meet Virpi very often because she lives so close to me. I usually go to her place and we'll have coffee in the afternoon or tea in the evening.

Anne, 20, Female, Helsinki, Finland

WHY IS THIS IMPORTANT?

Family, values, interests, work, ethnic/cultural identity, institutions, geography, and places are all important dimensions for structuring social networks. Each of these dimensions serves as the basis of relationships or clusters within networks (see Figure 5). People are born into families and sets of relationships, they also have friends who share the same values or interests. In fact, each of these dimensions defines the connection we have to other people. Why is this important for businesses?

Abundant Connectivity Redefines Network Dimensions

Young people are forming networks along multiple dimensions and across traditional boundaries of geography and place. The networks formed along these lines are extensive and diverse, each exerting influence on an individual's desires, needs, and preferences.

By compounding or superimposing dimensions on top of each other, individuals are redefining the dimensions themselves. We see this in both David and Bernard's networks. For example, ethnicity and

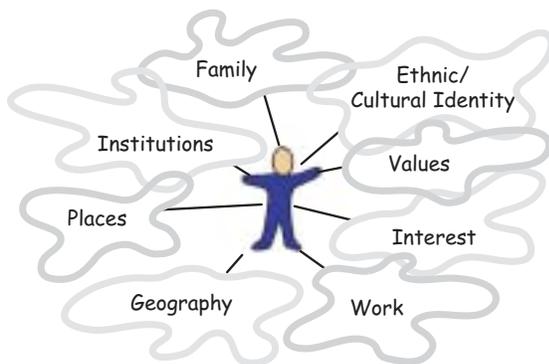
institutions are superimposed and compounded in David's network. David participates in ROTC and actively recruits his Asian friends to join ROTC. As a result, most participants in ROTC at his school are Asian. To them, ROTC is less about patriotism and more a platform for participating in American society—they are looking for resources to get to college, become professionals, and achieve their dreams. ROTC has become a resource not only for the individuals directly involved in the program but for the Asian immigrant community as a whole. ROTC provides ready-made access to resources—organizational infrastructure, knowledge, and activities—and provides a connection to people in the community. In the end, ROTC is an efficient way to become “American.”

We also see this superimposing of dimensions in Bernard's network. He is the classic Silicon Valley entrepreneurial personality who doesn't differentiate friends from potential work relationships along any of these dimensions. For him, his French friends, his gaming friends, people at work, people he lives with, and so on are all potential clients, partners, founders, or employees of Bernard Inc. Bernard doesn't separate the personal from work.

Traditional Measurements Don't Work Anymore

It is important for businesses to understand the way young people compound dimensions because traditional definitions and measurements of the hybrid categories formed as a result of such compounding no longer work. Traditional measurements—by demographic, socioeconomic, and psychographic characteristics—take only a few dimensions into account when trying to target relatively large consumer groups. Such broad categories may have worked when there were fewer communication channels and fewer possibilities for connecting across geographies, interests, and values, but they fail to capture the richness and multidimensionality of today's youth.

Figure 5
Multidimensionality of Relationships



Source: Institute for the Future

How would they capture, for example, the fact that white rural youth in Utah and multiracial urban kids in London share the same interests and may have similar purchasing preferences? What connects these kids is not similarities of geographic location or socioeconomic and educational backgrounds, or even similar psychographic characteristics, but shared values crystallized in the Straight Edge movement.

This kind of multidimensionality can be expressed in different ways. Family means different things to different people, ethnicity has multiple dimensions—one can be American, Chinese, Vietnamese, and Asian, all at the same time. For companies it becomes more important to track flows—who connects with whom, who is talking to whom and about what—rather than identifying stable and homogeneous population groupings.



Wide Reach, Narrow Channels

Knowing how a network is organized provides a good picture of the network, but a picture is static. To truly understand the dynamics of a social network, one has to know the reach of the network—not only how many individuals the network contains but how many worlds the network encompasses, how many boundaries the network crosses. Such boundaries may include boundaries of geography, interests, profession, culture, and so on. Each of these worlds calls on a different aspect of the person's self, offers access to different sets of relationships and resources, requires different sets of skills, and engages a person in different activities and rituals. How a person moves through these multiple worlds goes a long way toward defining that person's self-concept.

For a company trying to leverage social networks to diffuse new products, the wider the network's range the better. Indeed, the more boundaries a network crosses, the better the chance for diffusing ideas and practices between disparate parts of the network and the greater the potential for innovation. As a network's reach grows wider, the dimensions around which relationships are formed are redefined, which creates hybrid categories that are often difficult to track with today's tools.

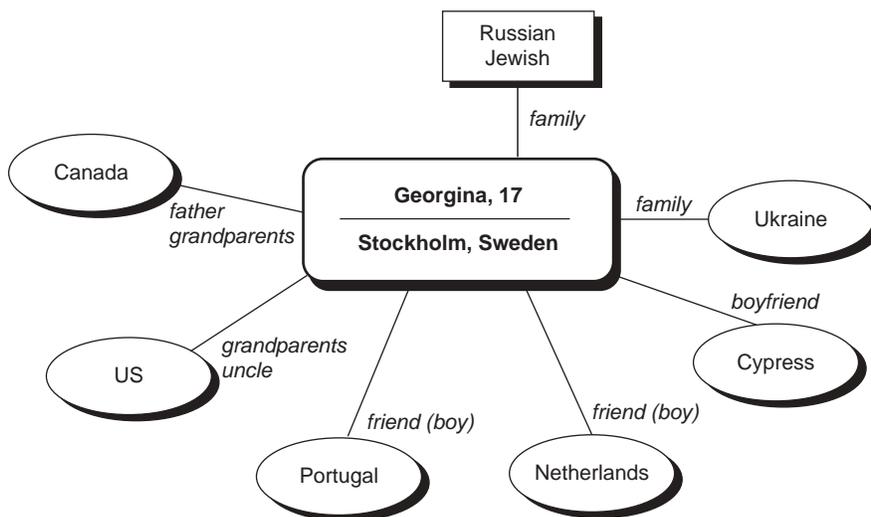
YOUNG PEOPLE LIVE IN MANY WORLDS

The networks of most of the young people we interviewed crossed multiple boundaries of place, ethnicity, interests, institutions, and even family. For most of them, connections to multiple worlds are a natural part of who they are. Although the networks of 13- and 17-year-olds were somewhat more limited than those of twentysome-

things, even at the younger ages, the reach of the networks was quite extensive. We sketch out several examples below.

Georgina, a 17-year-old living in Stockholm, Sweden, was born in Ukraine of Jewish parents. Although currently living in the somewhat homogeneous environment of Stockholm, she is connected to many different worlds: the world of Jewish religion and customs (she attended a Jewish school in Stockholm); the Russian-speaking Jewish community in Canada, where she spends summers with her father and his second wife; the United States, where she visits her maternal grandparents and uncle; and Europe, where she has traveled extensively from her base in Stockholm. What's more, her network of former, current, and potential boyfriends extends from Sweden to Canada, Portugal, and Netherlands (see Figure 6).

Figure 6
Georgina's Social Network



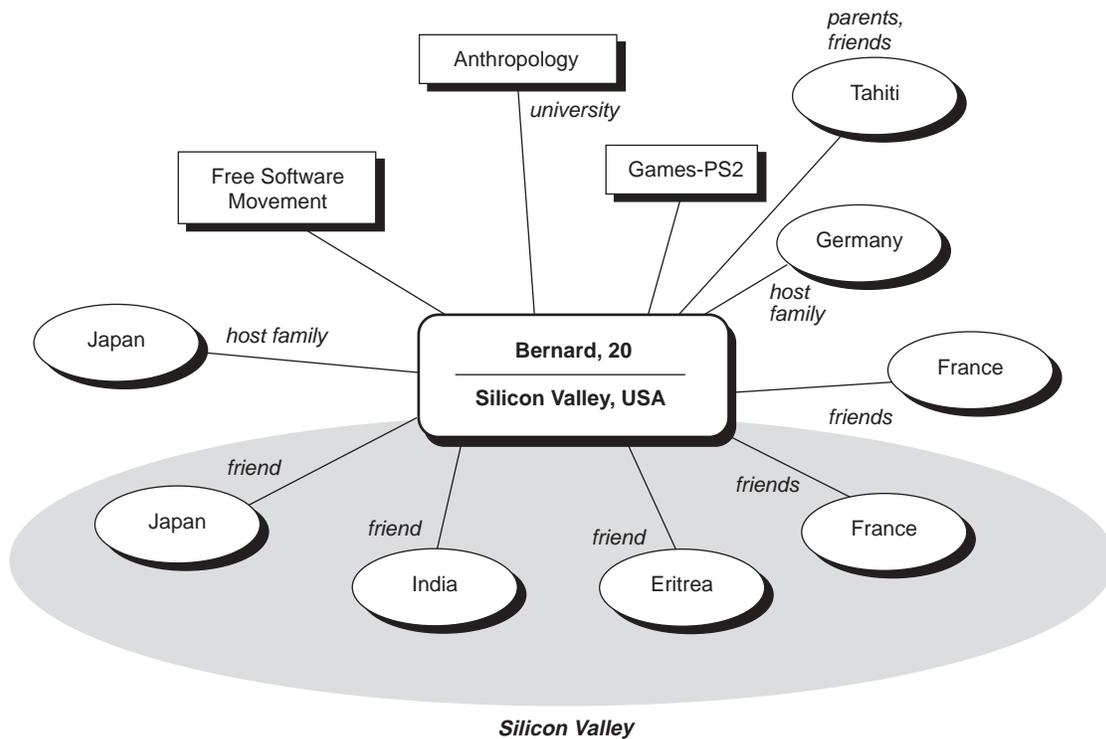
Source: Institute for the Future

Bernard is a 20-year-old electrical engineering and anthropology major who currently studies in Silicon Valley. He is French, and his parents live and work in Tahiti, where he spent his adolescence and has a network of family and friends. Bernard attended high school and community college in the United States before transferring to a university. He has lived extensively apart from his family and as a result has established familial relationships with several surrogate families. In this way, his family network crosses the boundaries of the traditional nuclear family and includes various proxy parents and siblings in different parts of the world.

Bernard has made many friends in the places he has lived and attended school, including Silicon

Valley, France, Tahiti, Germany, and Japan. Silicon Valley itself provides a platform for Bernard to extend the reach of his network—he hangs out with a diverse group of friends with deep connections to other countries, including Eritrea, India, Japan, and Mexico. His friends in Silicon Valley vary in age from university peers to substitute parents and coworkers in their 50s. His network also spans a cross-section of interests, including Macintosh users, gaming friends, people with whom he can have deep conversations about philosophy, and even “risky business” friends such as Mel, who belongs to a network of young people with history of drug problems (see Figure 7).

Figure 7
Bernard's Social Network



Source: Institute for the Future

Rick is a 17-year old finishing his last year of high school in London. Rick's mother is black British of Nigerian ancestry. Although he's never been to Nigeria, Rick has relatives there whom he sees occasionally. His father is white British from the Midlands, where Rick regularly visits his paternal grandmother and family friends. The worlds of black British and white working-class Midlands combine comfortably in Rick, who is not preoccupied with his ethnic and racial background—it isn't relevant to his identity, he says.

Rick's world is deeply rooted in the urban London landscape, with its music gigs and punk rock concerts. By means of online chat rooms, Rick regularly exchanges information with other hardcore music fans locally and around the world. Through his family, Rick also has friends in the United States and has traveled extensively there and in Europe (see Figure 8).

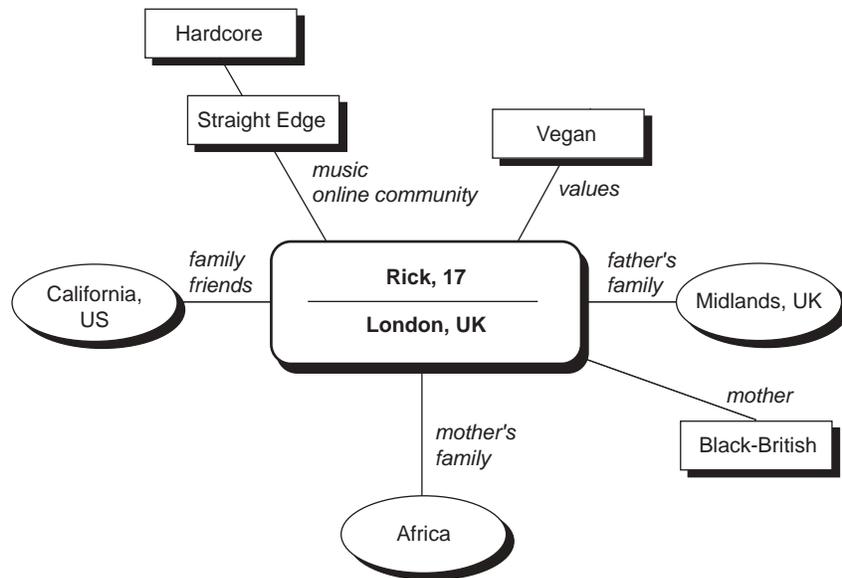
For these young people, boundary crossings—of ethnicity, culture, interest, and even family configuration—are a natural part of their identities.

LIVING IN MULTIPLE WORLDS IS AN ASSET

Whether born into a diverse mix of identities or purposefully setting out to acquire them, many of the young people we interviewed saw participation in multiple worlds as an asset. Being global is one such asset. Some indeed are born with global connections—David, for example, is Chinese Vietnamese and living in Silicon Valley. Simply by the circumstances of his birth, he is global, with a strong self-concept as an international person with connections to Hong Kong, Japan, and Vietnam.

Others have to make an effort to acquire this asset. The parents of Moira, a 13-year-old American living in Silicon Valley, have had to work hard to

Figure 8
Rick's Social Network



Source: Institute for the Future

give her an international experience. They supported her participation in a student exchange program several years ago, for example, which brought together students from several different countries for a trip to Japan. Even so, she doesn't keep in touch with either her Japanese hosts or the other students from that trip. Being global does not come as naturally to Moira as it does to David.

Ewen, a 23-year-old designer in London, spent a year in Holland as an exchange student, during which he developed relationships with other young people from all over Europe. This trip awakened an interest in foreign languages, and he is now studying Dutch and Spanish. He also travels frequently to see his friends all over Europe, and in general thinks of himself as having an international viewpoint.

Even in Japan, where being different has traditionally been discouraged, many young people increasingly realize the power of experience in different worlds. While previously many Japanese who lived in the United States and learned to speak English fluently had to hide their knowledge when they returned to Japan in order not to appear too un-Japanese, Naomi, a 27-year-old who was educated in the United States, the United Kingdom, and Japan, sees her fluency in English and her understanding of American culture as a definite asset.

Interviewer: Do you see your image of being international as an asset here?

It works both ways. People tend to label me as "kikokushijo."

Interviewer: "Kikokushijo?"

A "returnee," like students, who spent years abroad, they came back; they don't really fit in Japanese society. ... But at the same time, being a "kikokushijo" means that you speak English. And that's like the new elite,

so to speak. So, it gives me an advantage, too. And also allows me to be different because people think that you're "kikokushijo" anyway.

Naomi, 27, Female, Tokyo, Japan

Naomi enjoys playing her "global" card, which she sees as an asset in her professional and personal life. In fact, being global for her translates into having a license to do things others would not.

I think it also has to do with the fact that I'm young and I am a female. If you're a female in a sort of male-dominated community, you're not going to be in the mainstream anyway, so people are bound to judge you with a different criteria, which is not a bad thing in itself, because that gives me a sort of upper hand. It gives me a certain freedom to do things that people in the mainstream would never do.

Naomi, 27, Female, Tokyo, Japan

For Bernard, a French engineering student, it's less a matter of license and more a matter of expanding his worldview. A hallmark of Bernard's network and life is its global, intercultural reach. This matters to him "because I grew up around a lot of cultures. My point is, why would I limit myself if I can do this?" But the key point is not cultural diversity so much as incorporating the perspectives of different people into the network so that he can call on them as an entrepreneur later in his career. These different perspectives can be differences in background, differences in class, or differences in personal experience. And according to Bernard, such differences could be found locally as easily as worldwide—in a neighborhood in the suburbs, for instance, where people have come from all over the world with different cultural backgrounds and per-

sonal histories. In Bernard's words the diversity is just "part of life. It's [a] better presentation of life."

YOUNG PEOPLE AS IDEA BROKERS AND INNOVATORS

Not only do many young people view being global or living in different worlds as an asset, they actively use their reach to bridge the different worlds and bring ideas and innovations from one to another.

Naomi, for example, is involved in a small group in Japan called Financial IQ. This group was founded by one of her friends with the aim of bringing American-style investment practices into Japan. The growing Financial IQ circle meets monthly to play a stock market game (developed by an American investment entrepreneur and writer) and practice their investment skills. In fact, Mr. Masumoto, the founder, recruited Naomi because he needed someone with cross-cultural skills such as hers—a young, English-speaking person who had spent time in the United States and would be able to translate both the language and ideas to the Financial IQ group.

Frank is a 25-year-old Swede, who, like Naomi, thrives on making connections across the globe and across disciplines. Fascinated by blackjack and Las Vegas, he has read numerous books on how to beat the casinos and practiced the card game intensively. While working a summer job in San Francisco, he traveled to Las Vegas and did an onsite study of the casino world. Learning how knowledge accumulated in the gaming industry gave Frank the idea that similar techniques could be utilized in the telecommunications business. Upon returning to Sweden, he wrote to the CEO of one of the most famous casinos in Las Vegas proposing that the CEO sell expertise in understanding consumers to the telecommunications industry. This resulted in a job offer (which he turned down) and various interesting online discussions. Frank not only connected the two worlds—casino gaming and telecommunica-

tions—but actively tried to bring knowledge from one into the other (see Figure 9).

In another instance, while he was doing an internship in Brazil for a Swedish company, Frank managed to get the license to distribute a free daily newspaper in the subways of São Paulo and Brasilia, an innovation in those markets. The idea followed the example of the Swedish free daily newspaper *Metro*, which is handed out on public transportation. In the end the project was not realized. He worked on another project in Brazil, at Curitiba University, trying to implement Scandinavian-style employment relations in the region. To finance the project, he found a job with a Swedish company there. Indeed, many of Frank's activities involve this kind of cross-fertilization.

TECHNOLOGY ALLOWS JUST-IN-TIME RELATIONSHIPS

Before the advent of information technologies, networks with this kind of reach were only possible for those who were lucky and rich enough to travel around the world. Today, technology not only enables young people to maintain extended networks of relationships across boundaries of place, interests, cultures, institutions, and so on, it also allows these relationships to be activated or deactivated as needed. In this way, just-in-time relationships have become important components of social networks. Georgina, for example, has a whole portfolio of so-called "weak" links (people she does not know very well but who are still a part of her network) that can be converted into stronger links or downgraded as necessary. Her relationship with P. in the Netherlands, whom she met on one of the trips from Canada, grew stronger over e-mail.

P. is from Holland. We met on the plane, flying home from Canada. And we are mailing, have been mailing every day until now.

Interviewer: Do you feel like your relation to J. [from Portugal] and P. has developed over the Internet?

Mainly with P. We write quite long mails. Now it's more seldom, but it used to be every day. We have stayed in touch almost one year now.

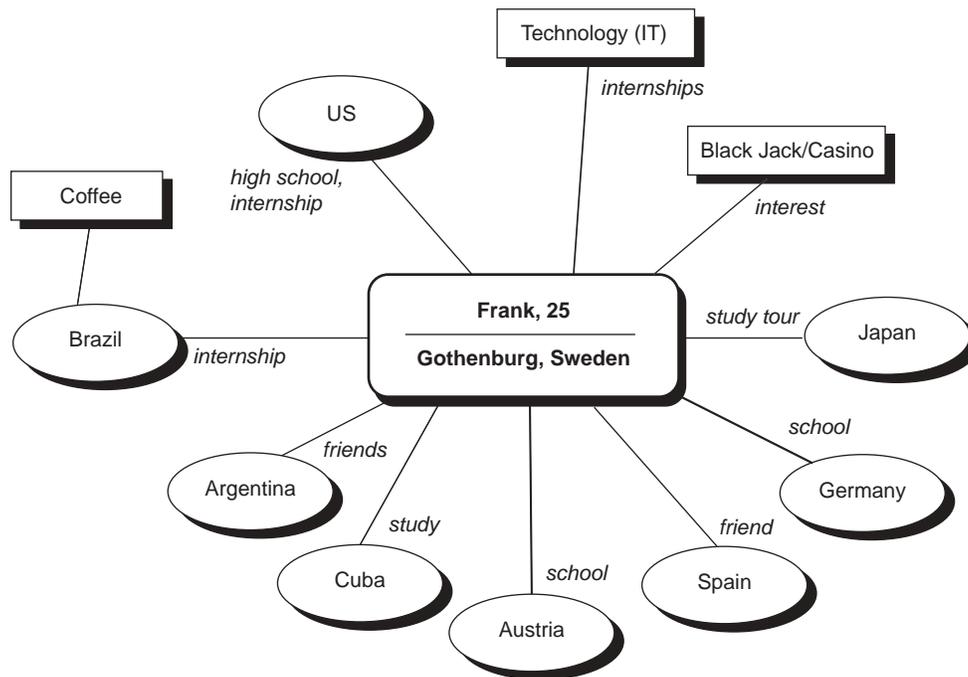
Georgina, 17, Female, Stockholm

While her relationship with P. has intensified with the help of e-mail (she almost went to visit him in the Netherlands but decided against it at the last minute), she has downgraded her relationship with M., her Canadian boyfriend, through the same medium. With e-mail, Georgina is able to manage rela-

tionships in her network and can "turn off" and "turn on" relationships in a just-in-time manner. The best example of how this works is the way Georgina got in touch with N., a Swede she met on a vacation in Cyprus with her mother. When they first met, she didn't want to pursue a relationship, so she didn't get his phone number or e-mail address. Later, however, she decided that she wanted to try after all. She turned to the Internet to find him.

I looked him up through ICQ Web site. You enter their name and family name. Then I got a lot of matches and then I simply e-mailed them all asking whether they were in Cyprus the week of 15 or 16 ... I got a reply yesterday. He asked how things are

Figure 9
Frank's Social Network



Source: Institute for the Future

with me and said that things were going well for him. I don't know if it's him. Might be. Good chance it is.

Interviewer. So you are taking it further via e-mail?

Yes. To check if it really is him I asked him to name all his accompanying friends.

*Georgina, 17, Female,
Stockholm, Sweden*

Similarly, Naomi relies on the Web site run by the college she attended in Wales to find fellow alums whom she can contact when visiting overseas; and fellow alums visiting Japan look her up through the Web site to gain an instant connection in Japan. These relationships are activated and deactivated on a just-in-time basis, and the process is facilitated and speeded up by information and communication technologies.

WIDE REACH, NARROW CHANNELS

The young people we interviewed are very aware of the many narrow and highly specialized ties that hold their far-flung networks together. In fact, they distinguish such ties from deeper relationships by describing them in different ways—there are friends who “know everything about me,” “know me as a whole person,” or whom “I can tell everything to”; and then there are others who are “just my gaming friend,” “my windsurfing friend,” or “my theater friend.” Thus, while the range of many networks is wide, the channels in many cases are narrow—that is, they are related to a specific interest, just one aspect of the person, or a particular setting.

For example, Masa is a windsurfing enthusiast who has an extensive network related to windsurfing. When he is not surfing, he spends time looking up windsurfing sites to check weather conditions,

competition results, and gear to buy. Most of his windsurfing friends belong to the same university club, and have shared years of training and social events. Windsurfing is their primary connection. The other part of his windsurfing network consists of friends he has met through competitions or in windsurfing stores. He acknowledges that outside of windsurfing, he knows very little about these friends.

Naomi's network is very extensive, crossing multiple boundaries of geography, interests, and functions; yet it is highly specialized as well. Sometimes the disparate groups are quite separate. Other times there is a lot of overlap between the groups.

It's a writer's community. Then we have a designer's community.

Interviewer. Separate?

It's separate, but this designer's community overlaps with this one.

Naomi, 27, Female, Tokyo, Japan

Naomi readily outlines other highly specialized communities and relationships in her network.

There is another mailing list that I belong to. It's a group of people who were born in the year of the rat in the Chinese calendar. Everyone but myself is either 12 years older than I am or 24 years older. I'm the youngest and probably the only female member.

There are people who are doing startup ventures, but some of them are in the extensive community. Julie is an extensive person, as well. They have this extensive community. I know quite a few of the

extensive community, and they are mainly into digital media.

Naomi, 27, Female, Tokyo, Japan

Like Naomi, Bernard has an extensive network, but many of its ties are narrow. Bernard's dream is to build a company, which is innovative in organization. He enters relationships so he can collect sets of experiences that may be valuable in creating this business.

If I happen to make a company, then I'll try to incorporate as much feedback from people that I have. It's based on my experience with my different friends.

Bernard, 20, Male, Silicon Valley, United States

In this sense he is building a portfolio of relationships that are rather weak, but are related to his areas of interest (certain countries, companies, things that motivate him) and which he imagines can be useful in the future.

A good number of relationships in these persons' networks are highly specialized, with people serving particular roles, filling particular needs, and often connecting to the person through a narrow set of interactions drawing on a particular aspect of a person's identity or a narrow set of interests. This kind of specialization, though necessary in managing such far-ranging networks, can cause one's range of information and viewpoints to grow narrower rather than wider. And technology amplifies the ability to connect to other people based on such narrow sets of interests. While participation in Straight Edge networks connects Rick to many people around the world, for example, Rick is really only exposed to a globally extensive but self-selecting group of like-minded enthusiasts of hardcore music.

Cass Sunstein, a law professor at the University of Chicago and author of the book *Republic.com.*, warns of an emerging phenomenon he dubs "The Daily Me." The Daily Me is shorthand for the customization that has become a routine part of life on the Web, as sites encourage visitors to filter news and information according to their preferences. Sunstein warns that if people wind up seeing only what they think they want to see, they won't be exposed to ideas outside their preconceived notions—and won't be as likely to grow intellectually or emotionally. The same is true of social networks—if people structure relationships to share only one area of interest or one aspect of identity, there is a potential for narrowing rather than widening one's scope of vision.

Thus, abundant connectivity is driving two contradictory trends in social networks—on the one hand, it offers the chance of widening the reach of many networks around the world; on the other hand, it can lead to filtering and specialization within networks, thus narrowing information flows and exposure to different points of view.

We observed this phenomenon in some of the networks we studied. Although Naomi lived and studied in the United States and Wales, for example, her main connections to these places are through other Japanese people (Japanese students who went with her to school in Wales, and a brother living in New York). Her geographic network appears to be wide, but her connections to these locations are quite local, filtered through the lens of Japanese family and friends. Similarly, Georgina's network crosses Ukraine, Sweden, Canada, and the United States, but her connections to these places are largely through her Ukrainian Jewish family. In fact, she speaks Russian more often and is surrounded by more Russian-speaking friends and relatives when she is in the United States or Canada than when she is in Sweden.

The Global Reach of Small World Networks

Jim Herriott, Vice President, Bios Group

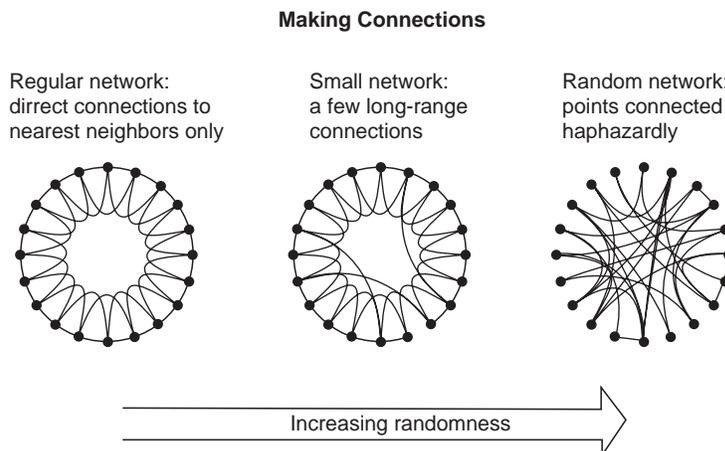
Network links can be described not only as wide or narrow, but as “long” or “short” as well. The length of the links, as enabled by communications technologies, has a lot to do with how far and how effectively the network reaches around the world.

Before the advent of electric and electronic communication, people could only talk to their geographical neighbors, and could communicate at a distance only by means of letters left to the vagaries of physical delivery. They were, in a sense, limited by the sluggishness of atoms. With the advent of electronic communication, things have changed. “Bits” (a single, basic unit of computer information) have no such geographical affinity. Bits can go far while atoms stay near. This dramatic difference between bits and atoms can create relatively simple structures with tremendous reach called “small world networks.”

Imagine a global network with only short, atom-based links (See Figure 10). An individual is only linked directly to those close by. If she wants to send a message to someone far away, she has to do so by passing the message to someone nearby, who passes the message to someone near that person, and so on, until the message finds the intended recipient (mailing a letter is only a slightly more efficient way of accomplishing the same thing). That recipient may be thousands of links away. Under this scenario, it’s easy to get a message to a neighbor, but harder to communicate globally.

Next, imagine the opposite network with only the longer, random, bit-based links. The individual is equally likely to be linked directly to anyone in the world. In this case, she’s only a few degrees of separation from everyone in the world. But it’s difficult to contact anyone in particular. In this net-

Figure 10
Random Links Increase Connections



Source: Jim Herriott, Vice President, Bios Group

work, it's easy to communicate globally, but harder to talk to a neighbor.

Finally, imagine the first short-link network again. Now trade a very small number of short links for (potentially) long random links. These longer links connect you directly to another person at a distance, who can then connect you to others in that same place. The idea of small world networks is that it takes only a small number of long links to make global communication easy. Meanwhile, trading away a few short links hardly degrades access to neighbors. This is the best of both worlds, the sweet spot in the trade-off between mostly short links and a few long links (see Figure 11). This is the small world network.

There's another way to look at it. As individuals travel within their own web of strong links, there are multiple ways of getting to the same people. This is their familiar milieu, their community. But from a network point of view, there are many redundant, wasted links. The links don't have opti-

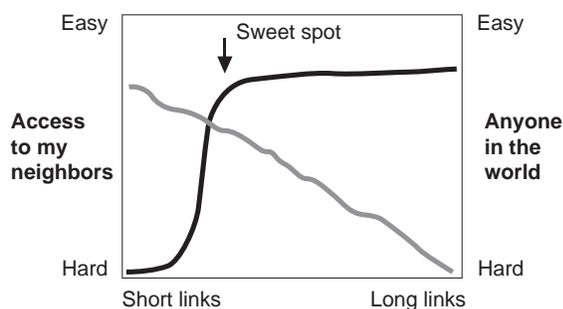
mal leverage toward enlarging the social network. They keep these individuals provincial.

However, with the advent of more specialized dimensions of social relationships, people also typically have a number of single-purpose "soda straw" connections to certain other people they know through only one aspect of their experience: music, computer gaming, and so on. The very nature of these weak links transports an individual to a foreign tribe, none of whom know anyone in that individual's tribe except the individual herself. This single soda straw link connects that individual to an entirely new universe of people (see Figure 12).

Social networks often "self-organize" into these kinds of small world networks, retaining local connections while being seasoned with enough long links to efficiently connect with the local tribes around the world. This is their value to the individual, and this is their value to any company that can follow these networks around the world.

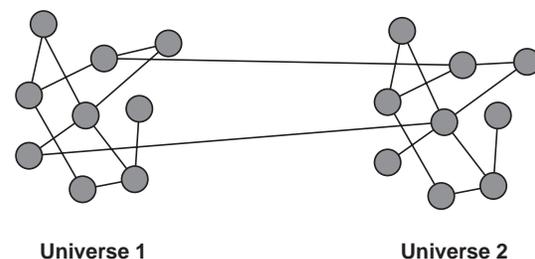
For more on Small World Networks please see *Small Worlds* by Duncan J. Watts, Princeton University Press, 1999 and the Santa Fe Institute at www.santafe.edu.

Figure 11
Small World Networks



Source: Jim Herriott, Vice President, Bios Group

Figure 12
Soda Straw Links Connect Different Universes



Source: Jim Herriott, Vice President, Bios Group

So I speak Russian a lot during the summers. I am quite fluent, but I forget during the year. So I have to get started every year when I land in Canada. I have to force myself.

*Georgina, 17, Female,
Stockholm, Sweden*

What this points to is that the reach and diversity of nodes themselves cannot be equated with increased openness or wider range of influences. One needs to understand the nature of the connections to these nodes and how wide or narrow they are.

WHY IS THIS IMPORTANT?

It is important for companies to understand how such complex, wide-ranging social networks function because they defy traditional marketing tools for tracking them. As businesses compete to be heard among a staggering number of marketing messages in the 21st century marketplace, finding ways to reach consumers through their networks will be critical for establishing contact with them. What's more, businesses will ultimately find that such complex networks promote both innovation and diffusion, the holy grails of any leading-edge company.

Reach Redefines Traditional Categories

Wide-reaching networks explode traditional categories such as family, ethnicity, and culture, as each of them becomes multidimensional. Many more social relationships count as family nowadays, for example. In our interviews we heard people characterize relationships as “he is like a brother” or “she’s like my mom,” or “I consider them family.” Bernard has several surrogate families (including mothers and siblings) in different locations across the Bay Area—San Jose, San Francisco, Walnut Creek, and even at his university.

The same applies to ethnicity and cultural identity. People are not limiting themselves to traditional

definitions of ethnicity or culture. David lives in Silicon Valley and is Vietnamese Chinese, he studies Japanese, and considers himself Asian-American. His ethnicity is multidimensional—he is Vietnamese, Chinese, Asian, and Asian-American, all at the same time. If businesses don’t find a way of communicating with their customers across these categories, they will be left behind.

Wide Reach Promotes Innovation

Many of the most significant innovations result from joining together previously unconnected ideas, practices, or people. Thomas Edison used the knowledge of electromagnetic power derived from the telegraph industry to create innovations in telephony, lighting, railroading, and mining. Artistic, cultural, and technological innovation doesn’t take place in a vacuum—people meet, talk, listen to each other’s words and ideas, take in each other’s thoughts, and test out new ideas, change their minds, try something else, and so on. The more worlds one lives in or connects with, the greater the potential for transferring ideas and practices from one to another, and thus the greater the potential for innovation. As Peter Hall points out in his book *Cities in Civilization*, “by accidents or geography, sparks may be struck and something new come out of the encounter.”

To strike sparks in this way, innovative companies are increasingly considering the reach of their employees’ personal networks in their hiring practices. IDEO, one of the most innovative design companies in the world, hires designers not just for their specific work experiences but also for their knowledge and interest in areas outside work, such as toys, cycling, model airplanes, sailing, sculpting, farming, woodworking, music, and anything else you can imagine. As a result, each engineer has a distinct body of technical knowledge gained from working with IDEO clients, from past training and work experiences, and from his or her personal interests

and backgrounds. The broad knowledge and interests of IDEO's engineers result in personal networks and access to design solutions well beyond the scope of projects IDEO is actually working on. More companies would do well to adapt IDEO's example to their particular circumstances.

Wide Reach Aids Diffusion

People whose networks cross multiple boundaries serve as key agents for diffusion, transmitting ideas and practices from one group to another. (For more on this, see Part II, "Diffusion of Ideas, Products, and Services: Case Studies and Lessons.")

Individuals form many network links that require little effort, such as those with family and geographically based friends. As noted by Everett Rogers in *Diffusion of Innovations*, these networks are often the most rewarding because they're the most enduring. Although personally rewarding, such low-effort links are of limited value for diffusing ideas and practices because the groups tend to stay small and homogeneous. As Jim Herriot observed, it is the "long" and oftentimes "weak" links that connect these local groups with other groups that are socially and spatially distant that are critical for diffusing information and ideas (see text box, "The Global Reach of Small World Networks").

This phenomenon was best illustrated in a now classic study by Mark S. Granovetter (1973) of how people get jobs. Granovetter found that most people in the sample he studied found jobs not through the "strong ties" of close friends but through "weak ties," individuals who are on the periphery of one's network—for example, an old college friend or a former workmate or employer with whom only sporadic contact had been maintained. Chance meetings with these acquaintances sometimes reactivated these weak ties, leading to the exchange of job information.

The reason for the "strength of weak ties" is that an individual's close friends often know the same

people the individual does and thus are not a source of much new information or new ways of doing things. "Weak ties" offer individuals access to new worlds and new information that otherwise would not be available. Granovetter's weak links may be equated with Jim Herriot's straw links that connect people with dissimilar networks and thus new worlds.

Companies can stretch their capabilities by forming their own weak links in the world.

From Social Capital to Just-in-Time Portfolios of Relationships

There has been much discussion recently about the role of "social capital" in everything from community life to organizational efficiency to regional development. Harvard sociologist's Robert Putnam's book *Bowling Alone* traces the demise of civic engagement in American life, correlating it with increased crime rates and profound malaise in our society. To Putnam, the key measure of civic engagement is participation in various civic and community organizations, which build up individual's social capital, providing the glue that helps individuals and whole societies function more effectively. Akin to physical tools and training that enhance individual productivity, social capital as expressed through various types of mutual obligations incurred through continuous and often in-depth interactions between people affect the productivity of individuals and groups, according to Putnam.

Our interviews, however, indicate that young people are extremely adept at creating portfolios of just-in-time relationships, many of them narrow (around a particular interest or aspect of themselves) or weak (peripheral to their network), which they use quite effectively to find jobs, pursue interests, learn new things, find places to stay when traveling, and so on. Of course deeper, more all-encompassing relationships are still important and ever-present in their lives, but they also can accomplish much through their extensive portfolios of just-in-time

links, whether these are obtained through chat rooms, instant messages, Web sites, or various interest-based groups.

If this trend continues, the notion of “social capital” may soon become outmoded. In the hyper-fast markets of the 21st century, companies should soon be asking their workers about the effectiveness of their portfolios of just-in-time relationships, not about their social capital.



Social Networks As Markets

Given the wide reach of many social networks today, some nodes or clusters open windows to larger communities—self-defined, organized groups of people, whether online or in the real world, who share an interest, identity, value system, or the like. Many such communities are global, transcending geographic, educational, and socioeconomic boundaries.

What's more, some of these communities are large enough and cohesive enough to function economically as markets. Because these market communities are self-organizing and dynamic—new ones frequently emerge, evolve, morph, splinter into subgroups, or disappear altogether—traditional marketing techniques, such as segmentation by income, socioeconomic status, demographics, or psychographics don't work very well in identifying and understanding them. Yet these communities clearly shape individuals' lifestyles and purchasing patterns, and companies should pay increasing attention to them.

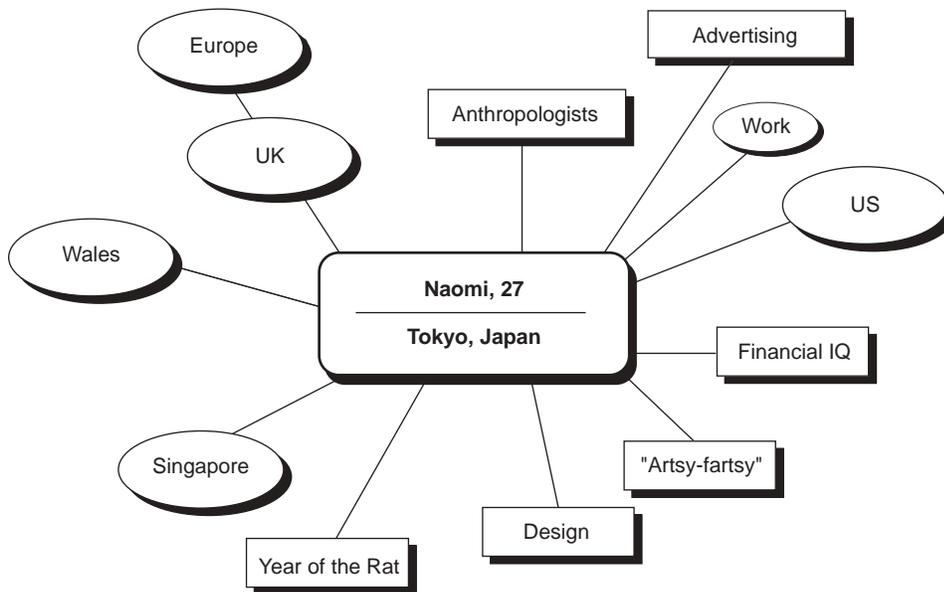
To understand how these communities function as markets, we need to understand how they are formed and sustained.

CLUSTERS LINK UP WITH COMMUNITIES

Network clusters link individuals to larger communities for reasons as diverse as the communities themselves (see Figure 13). Naomi is linked to multiple communities in design, anthropology, investing, etc. The links can be defined by common interests, values, geographies, or other dimensions discussed previously. For example, Bernard's Silicon Valley network includes a cluster of friends who strongly believe in the principles of the Free Software Movement. They share the ideology with millions of other software programmers around the world whose common adversary is proprietary software, with Microsoft at its head.

Membership in this community influences Bernard's activities in any number of ways. It defines Bernard's purchasing behavior with regard

Figure 13
Network Clusters Link Individuals to Larger Communities



Source: Institute for the Future

to technology, for instance—he doesn’t buy Microsoft products and has installed the Linux operating system on his PC. It influences his work preferences—he wants to work for Apple or with Apple products. It informs his philosophy on technology—like many members of the Free Software Movement, he believes in providing free access to computer technology for everyone. As a result, he puts a tremendous amount of effort into providing free technical assistance to many people in his social network. (See the text box, “A Community of Hackers: The Free Software Movement,” on page 46.)

The network of Rick, a 17-year-old Straight Edger, includes a cluster of friends (a few in “real life” and many more online) who are part of the global Straight Edge community. Straight Edge now spans the urban centers of London, New York, Los Angeles, and even more remote places like rural Utah and northern Europe. Participation in this community or network shapes Rick’s consumption patterns—he doesn’t buy alcohol, cigarettes, or drugs; he is a vegan; he listens to certain types of music and receives ideas and recommendations on what to read or listen to from other Straight Edgers.

David’s ROTC cluster also has links to a larger community, in this case the thousands of members of the national ROTC institution, with its many generations of participants. Likewise, clusters formed around ethnicity often link individuals to the larger communities of, for example, Asian-American, Vietnamese-American, Silicon Valley Indian, or Chinese diasporas. When communities this large and complex come together, they inevitably have significant economic effects.

WHAT MAKES COMMUNITIES WORK?

In the sense that these communities encompass large numbers of potential buyers or create a demand for certain commodities and services, they in fact constitute markets. What are the needs of these larger communities when they work as mar-

kets? Companies must understand such needs in order to deliver products and services to satisfy them. The following are four critical needs we identified in our research.

- *Identity and purpose.* Communities need an identity or a purpose to bring together their members. These can be interests, shared experiences, ideology, values, and so on.
- *Infrastructure.* Communities need an infrastructure and resources to enable and sustain the ongoing interactions and activities within them.
- *Activities and rituals.* Communities need activities and rituals to sustain social connectivity (for example, annual meetings, Friday night outings, parties).
- *Exchanges.* Resources, either tangible, such as money, or intangible, such as social support, must flow throughout the network in order to lubricate interaction.

Identity and Purpose

Identity is the distinguishing character of the community, what defines its meaning and attracts its members. The community’s identity is reflected in its rules for membership, its expectations of members’ behavior, the events it sponsors, its rituals and rites of passage, what members wear and how they look, and the stories, histories, and memories every community shares. Identity is managed and sustained by practices and performances, such as wearing certain kinds of clothes, styling hair a certain way, and participating in certain customs (going to church, not drinking alcohol, building and flying model airplanes, whatever the case may be).

For example, ROTC’s identity is rooted in the military and reinforced by practices such as studying, training, marching, and performing in competitions. ROTC’s identity is further reinforced by the uniform members wear, the haircuts they have, and

A Community of Hackers: The Free Software Movement

The Free Software Movement was launched in 1984 when Richard Stallman developed the GNU operating system and invited others to join him. The project aimed to bring back the early cooperative spirit of computing by removing the obstacles imposed by proprietary software, as represented by Microsoft, the movement's avowed enemy. The program was completed in 1991, when its Linux kernel was written by the Finnish programmer Linus Torvald. Today, the various versions of GNU/Linux operating system have an estimated 20 million users worldwide.

The great majority of Free Software advocates are software programmers, many of whom call themselves "hackers," but in the original meaning of the word—as computer enthusiasts and expert programmer. (These "true" hackers refer to criminal programmers as "crackers.") The Free Software ethic has a new attitude toward work—that work should be done out of passion and commitment, not primarily motivated by money but by the desire to create something of value to one's peers.

According to hackers, people should be free to use software in all the ways that are socially useful. This freedom has four principles:

1. The freedom to run the program, for any purpose.
2. The freedom to study how the program works, and adapt it to your needs.
3. The freedom to redistribute copies so you can help your neighbor.
4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.

Based on these principles, it is the ethical duty of hackers to share their expertise by writing free software and facilitating access to information and computing resources wherever possible. To this end, Stallman invented the idea of "copyleft" (as opposed to "copyright"). Copylefted information can be passed on freely, with two stipulations: the rights have to be passed on when the original or refined version is shared, and contributors must always be credited appropriately.

In the wake of the commercial successes of Linux-based companies like Red Hat and LinuxVA during the dot-com boom, the future of the movement is under debate. In 1998, the "open source" label was born when Netscape announced it was giving away the source code for its browser. The term open source was deemed more attractive to businesses than "free software." Richard Stallman and his Free Software Foundation eventually chose not to join the Open Source Initiative, however, and a rift has developed between the two groups. The only criterion for open source software—that the source code remains open—is much weaker than the four requirements for free software. Open source can include semi-free and proprietary software, with specific licensing agreements that restrict the use of the code. This goes against the fundamental spirit of the Free Software Movement.

how they comport themselves in and out of uniform. These traits establish group identity and link the individual to the institution and its history.

For Straight Edge, identity is expressed primarily by accepting its fundamental principles of abstinence—that you can “hang out, rock out, rage, get high” without alcohol, drugs, and tobacco. Visually, the Straight Edge identity is communicated by writing “X’s” on the members’ hands at gigs in public venues, and using “X’s” before and after their names in online chat rooms and e-mail addresses. Identity is further reinforced by sharing Straight Edge’s early history and its founder’s song lyrics and philosophy. (See the text box, “Straight Edgers—A Community of Shared Values” on page 48)

Infrastructure

A community’s infrastructure provides the basic requirements for bringing members together, whether physically or virtually: a place to meet, food and housing to sustain members, money to participate in activities, transportation to ensure face-to-face contact, technologies for facilitating virtual communication, and so on. In our interviews, we observed four important features of network infrastructure: the infrastructure is often hidden; technology is essential to communication; transportation is necessary for vital face-to-face interaction; and communities often tap into larger, more established institutions to strengthen their own infrastructures.

Infrastructure Is Often Invisible

Money, goods, and services that support a community’s infrastructure are often invisible to those who use them. Many of the young people we interviewed were not aware of, or simply took for granted, the infrastructures they relied on to keep their networks going. Financial assistance from parents made possible access to technology, food for social gatherings, transportation to activities, and so on. To participate in the hardcore shows they love, for example, Rick’s friends need a place to recover and

regroup after the concerts. Rick’s father often provides a place for them to stay and the food they need to reenergize. Similarly, Moira’s computer, which by her own admission she uses 2 to 6 hours a day communicating with people in her network to arrange theater outings, schedule parties, and so on, is a gift from her parents.

Technology Infrastructure Supports Network Communication

Communication is the glue of social relations, and youth are taking advantage of the abundant connectivity they are growing up with to deepen their relationships in networks and recruit new members. For networks that are spread out geographically, technology, primarily the Internet and mobile communication devices, is an essential tool for maintaining the relationships that define the network. There are three kinds of relationships that depend on technology: relationships with people met online and never seen; relationships punctuated by occasional face-to-face meetings but managed consistently online or by phone; and relationships intensively combining face-to-face and technology-enhanced communications.

Transportation Facilitates Vital Face-to-Face Interaction

While technology has enhanced, expanded, and sped up communications in networks, networks continue to need face-to-face interactions to sustain the connections. Face-to-face activities help maintain relationships, build community, and keep the network going. Transportation, therefore, is often a critical element of the infrastructure that enables network members to interact. See Part II, “Networks in Use: The Role of Social Networks in Key Domains of Life,” for more on the role of transportation in supporting social networks.

Institutions Are a Key Part of the Network Infrastructure

Communities often form around institutions. Schools, the military, industry organizations, and

Straight Edgers—A Community of Shared Values

The Straight Edge movement originated among the teens gathering at punk and hardcore concerts in Washington D.C. and New York City in the early 1980s. The movement grew as a reaction against the toll taken by drugs and AIDS in young people's lives.

At first the movement had no name, only the X symbol with which underage concert goers were marked on the back of their hands so bartenders wouldn't sell them alcohol. These kids recognized each other and got together for support. As bands realized that the over-18 admission policy of many venues cut them off from large numbers of fans, completely alcohol-free venues gained popularity, providing a meeting place for like-minded hardcore fans. Straight Edgers still "X-up" before they go to shows and don other symbols by which they recognize each other, such as T-shirts that include the words "Straight Edge" and a drug-free message.



The name "Straight Edge" comes from a song of the same title by Ian Mackaye, singer of the band Minor Threat, who wrote it as an obituary for a friend who had died of a heroin overdose.

*I'm a person just like you/But I've got better things to do
Than sit around and smoke dope/'Cause I know I can cope
Laugh at the thought of eating ludes/Laugh at the thought of sniffing glue
Always gonna keep in touch/Never want to use a crutch
I've got the straight edge.*

At its core, Straight Edge is a movement about self-preservation and abstinence. Its followers have carved out an alternative lifestyle by abstaining from alcohol, drugs, tobacco, and promiscuous sex—some even abstain from eating meat. Straight Edge is now a global phenomenon. Members even have their own frequently asked questions (FAQs) or glossary of important concepts and terms on the community Web site. Straight Edgers can be found in Sweden, the Netherlands, Germany, Australia, Canada, parts of Latin America, and even in more remote places like rural Utah.

activity-based organizations such as community theater bring people together and provide resources for activities (places to meet and equipment, for example) and an enduring structure. For example, ROTC anchors David's network, since it provides vital infrastructure for his network of friends. The ROTC structure, with its own highly orchestrated activities and rituals, serves to reinforce group membership as well.

Indeed, ROTC is a ready-made network—able to be grafted on to one's own or integrated into other domains of life. For David, ROTC opens access to a diverse set of resources throughout the country, and these relationships enter into other domains of his life such as school and entertainment. Institutions, whether educational, religious, or civic, represent an efficient way for individuals to expand their networks. Furthermore, many immigrants join institutions in the United States—and ROTC is a good example—to assimilate local culture and integrate themselves into the economy.

Activities and Rituals

Activities and rituals are essential to the maintenance of communities and networks. Not only do they result in closer interactions, thus reinforcing network membership, they also provide the shared stories essential to creating the collective memory on which such communities are built.

Activities and Events Are Essential to Network Sustainability

Activities and events create common experiences, memories, and narratives, in short, a collective memory, the sharing of which is an essential act of belonging to the community. In this way, in-person activities and events are important to maintaining and expanding networks. Our study participants describe the events that punctuate online relationships or long-distance connections with shared interactions. For example, Allison an 18-year-old hardcore fan from London, has a tight network of girlfriends, many of

whom share an interest in hardcore music. Going to clubs is their main social activity, a shared interest that determines who is in and who is out. Indeed, even once the events are over, they talk about them over and over again. This storytelling is so important that one friend who could not attend a certain concert lamented that she would feel left out because she would not be able to talk about it afterwards; the other girls agreed that this was true.

Many Online Activities Foster and Support "In-Person" Activities and Rituals

In the networks we studied, much of the technology-supported communication was designed to prepare for a physical event (a trip, going out to a club, a reunion) or to rehash a past event (looking at pictures from a party, discussing what happened, telling stories). As a result, much technology-assisted communication—e-mail, instant messaging, ICQ, and so on—serves as the glue holding the group together between physical events. In this way, online communication and the phone are used instrumentally to support face-to-face activities—helping make events happen and tying them together.

For example, Moira, 13, in Silicon Valley spends hours everyday on AOL messaging with her friends. Her weekends are filled with social activities largely organized during these times by her and a few other theater friends.

This weekend we're going to go to the Gaslight Theater. Sometimes—last week what did I do? Last week I went to a birthday party. The week before that I went to a dance. The week before that I went to—I don't know what I did. I did something. Oh—I had two of my friends sleep over, CTC [theater club] friends sleep over. Before that we went to the movies.

Moira, 13, Female, Silicon Valley, United States

Moira describes how, although they discuss things on AOL, she still relies mainly on the phone for settling meeting times and getting agreement.

Because it's more up to chance when you talk to them on AOL because—you have to hear the phone ringing ... and someone has to pick it up or someone has to listen to the answering machine. But when you do it on AOL you have to wait. You sit there and wait for someone to come on.

Moira, 13, Female, Silicon Valley, United States

Exchanges

Exchanges are the lubrication that keeps the network moving smoothly. In order to be an active part of the network, one needs to contribute something to the network; at the same time, in order to sustain interest, one must also get something in return. What flows through the network? What do people contribute to the network? The network, like all social organizations, depends on a form of perpetual gift exchange, a system of reciprocity. Gifts are never free but rather elicit return gifts that may flow directly back to the giver or indirectly via another node in the network. That is, some exchanges flow from one person to another, in a two-way exchange, and in other cases, they flow in multiple directions throughout the network.

The youth networks we analyzed certainly have their own gift economies. Primarily, they exchange information, technology, IT support, ideas, and music. They also exchange a great amount of emotional support, the value of which to the network shouldn't be underestimated.

For example, Anne makes her own clothes and gives away tailor-made dresses to her special girlfriends. Bernard thinks of personalized gifts for his

important friends and is known to give away iMovies and IT-equipment. Moira describes how they exchange information rather than physical things in her network. Information has a very high value and pieces of gossip (although Moira doesn't want to call it that) are traded as gifts. Frank initiates projects that result in learnings for his close friends and creates an exchange of experiences. Anton comes up with ideas for Web sites and computer games, which can be implemented together with his IT-skilled friends. In Georgina's circle of high school friends, the girls provide each other with strong emotional and social support. Important decisions such as whether to turn a boyfriend down are often made collectively.

WHY IS THIS IMPORTANT?

New communities or networks encompass large numbers of potential buyers and thus constitute important markets. However, traditional tools for identifying market niches, such as segmentation, are not particularly suited to identifying and responding to such markets.

New Communities Cross Traditional Marketing Segments

What brings together urban, ethnically-mixed, middle-class teenagers in London with rural, white, lower-income kids in Utah in a community like Straight Edge? How would traditional segmentation techniques identify this category? Straight Edge members come from a variety of socioeconomic, ethnic, and educational backgrounds and geographic locations. What unites them is a shared set of values around a particular aspect of their lives, around one part of their identity. Companies must learn to discern the network's identity and trace its paths among its members.

Most Communities Are Self-Organizing and Dynamic

The makeup of any community changes quickly as people leave and others join, bringing new ideas with them and reshaping old ones. As new members join Straight Edge, for example, they have begun to lay claim on the movement. Some groups want to bring a fundamentalist Christian agenda into the movement, others promote the values of vegetarianism under the same umbrella, and still others promulgate violence against those who do not subscribe to the Straight Edge principles.

With changes such as these, many communities morph, evolve, splinter, or coalesce into new communities. These are not the stable market categories with which companies are comfortable. These are highly dynamic and self-organizing markets that companies have few tools for understanding.

New Communities Are the Marketers' Dream

Many new communities exhibit characteristics of the “small world” phenomenon observed by complexity theory experts. In its simplest form, the small world theory postulates that under certain conditions, any network, social or biological, can become a small world network in which just a few long-range connections to new worlds increase the speed of diffusion within the larger network dramatically.

In other words, these are markets in which ideas, trends, or products diffuse fast—ideal markets for companies.

It works like this. The larger communities, such as Straight Edge or Free Software, consist of multiple local clusters in many places around the world—the United States, England, Sweden, India, and others. The local, more homogeneous clusters are connected to the other local homogeneous clusters by a few long links. These long links are likely to be people who act as brokers between the various worlds, whether online or in face-to-face interactions while traveling, living abroad, or as the result of migration. Thus, within such larger global communities with dispersed and distinct sectors lie great possibilities for the quick diffusion of information, practices, ideas, and, of course, products—the holy grail for marketers.

Communities Are New Markets for Businesses

Fulfilling or supporting the needs of communities is a growing opportunity for companies. Companies need to increasingly analyze what role they can play in supporting these networks—providing the necessary infrastructure and resources, supporting desire for building a group identity, or enabling exchanges and physical or online rituals and activities that are necessary for the community to exist. Instead of looking at social networks as information channels, businesses increasingly need to view them as markets in their own right with a set of needs and desires they can satisfy with the right products or services.



Network Management: An Expanding Domain of Daily Life

The young people we interviewed are creating relationships across boundaries of geography, ethnicity, culture, values, institutions, interests, and communities. In fact, all the dimensions that have traditionally served as the basis for creating social relationships in the physical world have been fragmented by increasingly sophisticated information and communication technologies, compounding the possibilities for new and different types of relationships and making the resulting networks quite complex. The extended reach and complexity of these networks mean that people must actively manage them if they want to get the most from them. Indeed, network management is evolving as an indispensable skill for living in the 21st century.

Social connectivity doesn't happen by itself. Rather, it is carefully cultivated and managed. Even the simplest acts of sending a picture, meeting a friend for lunch, sending an SMS message on the mobile phone, participating in a chat room discussion, or establishing an e-group on the Internet can serve the larger goals of recruiting, solidifying, monitoring, or activating or deactivating relationships—all necessary practices for managing one's social network. We discuss the more important activities here.

NETWORK MANAGEMENT IS QUITE DELIBERATE

People are putting their networks to use in a variety of ways—to find work, to create new companies, to get emotional support, and to learn new things, among a host of others. To leverage the utility of their social networks, young people are developing strategic network-management practices. In the case of Moira, a 13-year-old from Silicon Valley, her parents have taken on a large part of her network management. Both parents put great effort into hosting parties and organizing social events that help support and sustain their network of friends, neighbors, and other families. These nodes provide Moira with babysitting opportunities, transportation for school and theater events, new friends, and so on. Moira's parents' network management includes working on Moira herself—that is, making her likeable, well behaved, and sociable. In this way, people in the network are glad to have her around and are willing to pick her up or give her a ride when she needs one.

Masa, a 20-year-old Japanese university student, on the other hand, is actively managing his own network. Indeed, he's trying to extend it well beyond his current one. Masa describes how so far he has lived only in Japan, and how his network consists only of Japanese friends. At the time of our interview, Masa was making a deliberate choice to expand his network. By signing up for English and

marketing classes at a university in California, he intends to make friends from different countries and different cultures, friends he hopes to stay in touch with in the future. Deliberately placing oneself in different contexts for the purpose of creating relationships is a key network-management practice among the youth we interviewed.

Indeed, Frank, a 24-year-old Swede, has managed his network to provide as many experiences with as many people and in as many places as possible. Frank has made good use of his student years, traveling across the world on study tours, internships, and backpack adventures. Just like his close circle of university friends, he built a portfolio of experiences in different countries, cultures, and businesses. These experiences serve as a resource to be exchanged and shared with others in his immediate network. Network management for Frank is the exchange and sharing of experiences with his close friends. In the exchange, knowledge is transferred, new ideas are explored, careers are entertained. To manage their network of close friends, they use an e-mail forum.

Interviewer: So this "forum"—is that like a message board or e-group?

It's a hotmail address where we all send our messages, and then we can all access and read the messages. That's really a lot of fun. People send their travel stories all the time. Like when we were in Europe it was pretty good, since everybody knew about possible visits—rather than one person e-mailing just me, and so on. So we coordinated our trips.

Frank, 24, Male, Gothenburg, Sweden

Not only is monitoring the flow of information important in network management, so is monitoring

who gets what information when. This involves activating and deactivating relationships. As Bernard, a French engineering student, enters what he knows will be a very demanding school year, he has actively chosen to deactivate several relationships, not by cutting them off, but by letting them know they matter by doing “something special for every one of them” before he buries himself in his studies.

That’s why this year I’m going to make a lot of people realize that I’m not forgetting about them, but there’s stuff that I’m going to have to do in my junior year that is going to be so crazy that it would be easier if they understood that I’m not going to be in touch with them too much.

Bernard, 20, Male, Silicon Valley, United States

Bernard is trying to build good network karma by proactively letting people in his network know of his unavailability so they won’t be offended. In this way, he can make it through the year with his connections intact. This is a good example of what we mean by network management.

NETWORK MANAGEMENT PRACTICES

Recruitment, activation, and deactivation are only some of the ways individuals manage their networks. Indeed, there is a toolbox of different practices for managing networks from which people can choose at different times and for different purposes. Table 2 lists some of the common practices culled from our interviews.

Recruiting

Recruiting is the practice of identifying and adding new members to the network. At the most basic level, of course, networks can’t exist without recruiting. There are various strategies for doing so—finding people through online chat groups,

hanging out with friends who serve as magnets for others, or going to new places to meet new people.

For example, Jonas from Sweden, who describes himself as shy, has found that recruiting young women to chat with him on ICQ is a good way to have conversations with the opposite sex with little risk of personal embarrassment. His criteria for an ongoing contact are (1) how often they go online (no use talking to somebody who is not regularly online, he figures), and (2) how able they are to carry on a conversation and discussion. As a result, Jonas has about 30 friends (of whom 10 are also “real life” friends) on his ICQ list. Out of his 20 online friends, only one is Swedish, and they are all girls. To get as big a selection as possible, he sends ICQ “chat requests” in English, which explains the large foreign component.

Mr. Jones is responsible for the Japan program in the school attended by David, a 15-year-old Chinese Vietnamese American in Silicon Valley. To get students interested in learning about the Japanese language and culture, Mr. Jones has been particularly keen to use technology such as Japanese voice recognition programs and other educational support tools in the classroom. He has also introduced flashy activities such as Japan Bowl, the Japanese cheering sec-

Table 2
Network Management Practices

- Recruiting
- Colonizing
- Grafting
- Boundary management
- Boundary crossing
- Activating
- Pruning
- Surveillance

Source: Institute for the Future

tion at the homecoming game, and an exchange program with Okayama to attract interest for the program. The program has since become so popular that word of mouth now takes care of most of the recruiting.

And I kept adding things to the program. ... And add to that just wildly cool students—so many really fun people coming into the classes who in turn told their cool and fun friends to come take the class. And then their cool and fun siblings came and took the class. It was a really nice run for me, for sure.

*Mr. Jones, High School Teacher,
Silicon Valley, United States*

Colonizing

Colonizing a network means entering an existing network (usually a well-established one) and using it for one's own purposes. Colonizing networks or institutions is an efficient way to build relationships and expand one's network in a particular direction.

Some of the people we interviewed used this practice effectively. For example, Naomi, a Japanese business woman, was well aware of the resources and the relationships that would become available to her by becoming friends with some of her older male colleagues. Even outside the context of work, for Naomi, her network usually branched out further into friends and acquaintances' networks.

Immigrants can colonize organizations in their adopted countries to help them assimilate into local cultures and economies. Fifteen-year-old David has



I Seek You

ICQ (I Seek You) is a user-friendly Internet program that notifies you which of your friends and associates are online and enables you to contact them. With ICQ, you can chat, send messages and files, exchange Web page addresses, play games, create your own homepage, and much more. With the click of your mouse, you and your friends are instantly connected.

Source: www.icq.com

joined the junior ROTC program in his high school for just this reason. ROTC provides him with the relationships and resources needed to fulfill his dream of higher education and becoming a pilot.

Grafting

Grafting is the practice of taking a segment of someone else's network and adding it to one's own. Grafting requires establishing a link through others such as parents or by exchanging important resources in the network. Rick's parents have carefully grafted their networks onto his—as a result Rick has many pools of latent relationships among families in Europe and the United States. Luis, a 20-year-old Argentine American in Silicon Valley, has grafted onto to his mother's network by providing IT support to his mother's colleagues, in the process creating a business and a source of income for himself.

Boundary Management

People carefully manage network boundaries, sometimes purposefully integrating relationships across different nodes in the network (work and family, for example) and sometimes segmenting or separating relationships into different silos.

For Arthur, who is a freelance technology consultant for new media companies in Helsinki, Finland, work and personal relations overlap completely because many people he meets in the course of his daily life as potential partners for new projects can also become friends, often on the basis of shared interests in new media technologies. For Arthur, work is not just an economic proposition but an activity he approaches with passion and the spirit of fun. Arthur's interview was full of names of people he had met through one association or another and with whom he could envision further interactions for business, friendship, or both.

Boundary Crossing

Boundary crossing is the practice of placing oneself in new contexts or environments for the purpose of

cultivating new relationships, or accessing resources—knowledge, information, new experiences, and so on. Ewen, a 23-year-old Scot, describes how he made a conscious decision to decline a job in his hometown to be able to live in London. This is a new direction for the evolution of his network, and a significant step toward meeting new people.

Yeah, I was also accepted for the job in Scotland I applied for. But that was only 10 minutes from the house. It would have been a good job. It was interesting, designing and stuff like that, but I just thought I wanted to move to London for a few years. Before that I had only spent a grand total of a few hours in London just passing through. So I thought I would go and see it.

Ewen, 23, Male, London/Glasgow, United Kingdom

Activating

As we discuss in “Wide Reach, Narrow Channels,” networks are so widespread these days that at any given time, many relationships in a network may lie dormant. In this way, people create portfolios of just-in-time relationships, which can be activated as needed. The process of activating dormant relationships requires careful protocols and calculations. What is the appropriate mode of contact after relationships have been dormant for a while? What would engage the person so the relationships can be reestablished? How much time has to elapse before the relationship can no longer be activated? Protocols for activating dormant relationships are often idiosyncratic and network specific—shaped by the rules and social practices that have evolved within those networks.

One example is provided by Georgina, a 16-year-old from Sweden, who lives with her father in

Canada each summer. She is very excited about meeting up again with a Canadian boy she dated for a few weeks the previous summer, but she is very conscious of how she is going to activate this relationship.

There are a couple of situations I'd like to come true. I've been thinking about this a lot. The best would be this: I plan on calling M. three days after my arrival. Then it won't sound like I'm too pushy but like I actually have a life of my own. And yet it won't give the image of not caring about him. I hope he'll be happy that I'm there and that he doesn't have a girlfriend.

*Georgina, Female, 16,
Stockholm, Sweden*

In other words, activation is done deliberately, by conscious choice, and not left to chance.

Pruning

Pruning, or deactivation, is the opposite of activation, and can be achieved either proactively (by cutting somebody out of the relationships directly, by telling them so) or passively (by a kind of benign neglect so that the relationship slowly fades away). Just as there are rules for activating relationships, there are specific protocols for pruning relationships. These include calculations of appropriate tools, timing, and formats that are often network-specific. Moira "dumped" her boyfriend over AOL, for example.

He [her boyfriend] knew I was going to break up with him, because I had seen him that day and he knew I didn't like him that much anymore. I was just kind of like, "I need to talk to you." ... I said whatever I said to break up with him and I said, "Now we should just be friends."

*Moira, 13, Female, Silicon Valley,
United States*

Technology can go a long way toward assisting the pruning process. Many young people put all their network contacts on their IM list or in mobile-phones lists. This digital version of the network makes pruning easy. Deleting a contact from the list is easily done, and several respondents in our study regularly clean contacts from their lists. Anne, who is Finnish, describes her routine.

I have got 159 numbers here [mobile phone] ... there are mainly people's numbers, I mean, I don't have the number of the tax office or anything like that. I've got people and numbers listed and many of them aren't necessarily my friends but I have forgotten to erase the numbers so they are still there.

Interviewer: Yeah. Do you ever erase some of the unnecessary ones?

Oh yes, I could say that I wipe out some of them once a month. This may sound harsh, to say that I am doing this thing monthly, on the first Sunday of the month.

*Anne, 20, Female, Helsinki,
Finland*

Surveillance

Surveillance is essentially keeping tabs on friends' activities, locations, and relationships, in order to be able to contact or meet up with them when necessary or desirable. Today's communication technologies, particularly mobile phones, make it relatively easy to monitor one's network this way.

Rick, a 17-year-old Straight Edger from London, frequently sends SMS messages to his friends throughout the day, often in the form of curse words. Though not for everyone, doing it this way keeps Rick in contact with his network and reinforces the relationship with friends who respond to this method.

The volume of SMS traffic between him and his friends creates a mental map of the network as it is spatially dispersed in London, allowing Rick to manage the network in real time during the day—where people are, what they are doing, who they are with.

In Finland, Minna, 21, has a different surveillance practice. For her, the mobile phone and SMS have made it possible to be impulsive and spontaneous. She fishes for contacts when she is bored by broadcasting a message like “Where are you? What are you doing?” to her mobile phone list and then waits for the replies to come in. Then she decides, based on location and availability, whom to meet up with.

SOCIAL NETWORKS DRIVE MEDIA PREFERENCES AND PROTOCOLS FOR COMMUNICATION

Communication technologies, whether the Internet, pagers, or mobile phones, facilitate network management. Indeed, such technologies make up the infrastructure that sustains most social networks these days. Not only do they allow individuals to broaden the reach of their networks, but they also allow them to engage in the practices necessary for effective network management—surveillance, pruning, activation, recruitment, and so on. In fact, features such as phone lists on mobile phones and buddy lists for instant messaging have become proxies for the network itself. Moving people on and off these lists is one way of managing the abundant social connectivity technology has created in their lives.

The network itself plays an important role in defining media preferences for groups or clusters within the network. For some groups, the technology of choice may be a Web site, for others mobile phones or IM sites.

In Masa’s windsurfing group, the preferred media for staying in touch is a Web site, which he set up for this specific purpose.

Interviewer: How do you stay in touch with your windsurfing friends?

I have a Web site for the windsurfing friends. I keep in touch with those people on the Web, too. Most of the time, among the windsurfing friends, we have a chance to meet each other at the beach because we practice there. However, among the high school friends we don’t have the same hobbies, so we have a harder time meeting each other. We communicate more often on the Web site.

I think I made this Web site so I can communicate. It’s just part of the communication tools with my friends.

Masa, 23, Male, Yokosuka, Japan

Naoko, a young Japanese woman, describes how her younger brother (16) has not had any interest in using a PC for accessing the Internet or sending e-mail. The reason is that everybody in his network depends solely on Internet-enabled phones (I-mode) to stay in touch—cell phones, not PCs, are clearly the preferred media for communication in his network.

My new PC is really fast. And my mom, and even S, my brother, have tried it ... He never, ever used a PC ... But now we try to ... “Yeah, let’s do it, let’s do it.” And he wrote a mail to Ayako [older sister]. So, he wrote really short one. But, he was like, “Yeah, I can do it.” ... Most of his friends don’t have PC. That’s why he doesn’t use it ... He doesn’t have chance to; I mean he doesn’t need it. But if, all his friends have PC, maybe he will e-mail or something.

Naoko, 19, Female, Yokohama, Japan

Not only do social networks drive their own media preferences, they also determine protocols for communication between members—that is when and what is appropriate to communicate by phone, by e-mail, face-to-face, and so on. Julio, a 18-year-old in the Bay Area who hopes to attend the Culinary Institute of America, has a very clear opinion about what information technology is appropriate. He made a point of saying he doesn't have a mobile phone and thinks all technologies, except computers and online activities, are a waste of time that make people lazy. Meanwhile, Julio spends approximately 5 hours a day online. He prefers face-to-face contact and instant messenger, which he sees as more personal than phone calls.

I am so against cell phones ... I figure if I'm not home I'm doing something ... I'm not the kind of person who would just make a call out of nowhere and say a "Hey how are you?" I know it is cool when I get them, like courtesy calls, but I would rather ... go to people's houses. ... I don't know, somehow phones just seem more impersonal than online, for some reason because even though you can't see, you can't even hear their voice I feel like a stronger kinship.

*Julio, 18, Male, Silicon Valley,
United States*

What seems to be bothering Julio is not only his impression of mobile phone conversations as being less personal than online ones, but also the fact that he does not want to be seen as a mass consumer, who jumps on any gadget that comes out.

Everyone is just attached to it [the mobile phone], maybe that is why, I don't like things that are really popular. Like when In and Out Burger

first came out, I did not want to eat there. I knew it was good, [but] I didn't really want to eat there because everyone was there and it was the cool thing to do. So I tried to stay away from it. And I know I'm never going to get a cell phone or pager or anything like that.

*Julio, 18, Male, Silicon Valley,
United States*

Like Julio, each cluster within the network may develop its own, sometimes idiosyncratic media preferences and protocols for communication. To participate in these groups, a person must understand and comply with the rules of engagement. This is, of course, another big part of social network management activities—learning the communication protocols and media preferences of the different clusters and shifting these as one moves from one set of relationships to another.

For example, Anne in Helsinki has different messaging habits with different people in her network. With her best friend, who does not live in Helsinki, there is usually a couple days lag between the SMS message and answer. The messages they send do not need an immediate reply. The messages Anne sends to her school friends, however, about the logistics of setting up meetings or postponing them, are usually more pressing. Replies are expected to be immediate and brief.

Eeva, also from Helsinki, has a unique way of writing messages to her best friend. Each phrase in the message has to rhyme. This kind of customized messaging strengthens the relationship—in this case both parties understand it as being a unique, "only with you" kind of communication.

Interviewer: May I ask another one of these very specific questions? Do you and your friends have any special code for sending text messages?

Well, we use capital letters and leave no space between the words. Originally we did this and everything had to rhyme as well, like poetry. But it's just that it took so long to make it rhyme. If you just wanted to ask somebody for a swim you just ended up trying to find something that rhymes with swim. It always took about 15 minutes to write one message. And we just ended up using all these nonsense words just to make it—I have saved a couple of those messages, they're very funny.

Eeva, 22, Female, Helsinki, Finland

Different messaging protocols for different clusters within a network create coexisting messaging cultures. Eeva hints at the unspoken code and agreements she has with certain friends.

And with some friends I don't have to write everything, I can just write "Is J coming?" and they'll know what I'm talking about. And I think it's silly if I'm setting a date with someone and I suggest that we meet at Stockmann's at four o'clock and then the other person sends a reply, saying just "OK." Of course it's OK. And if it wasn't OK then she could write something back or then cancel the date by calling on the phone. So that they wouldn't always have to send.

Eeva, 22, Female, Helsinki, Finland

WHY IS THIS IMPORTANT?

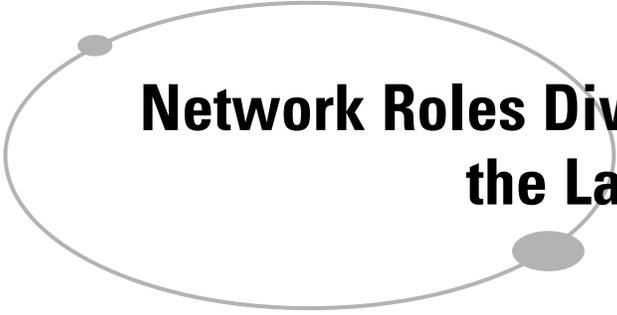
Network management is a major domain of life for young people, taking up a considerable amount of time, energy, and money. People must juggle multiple sets of relationships, each one dictating unique and idiosyncratic media choices and communication protocols.

Understand Management Protocols of Network Clusters

To truly reach anyone in a given network, companies must get to know the protocols and preferences of that network. Services that can target the individual's as well as the network's interests, needs, and desires are likely to be successful. When both the content and the communication method is tailored to the network's needs and preferences, marketing messages, for that matter, the offerings themselves are likely to be received as relevant.

Facilitate Network Management and Surveillance

Young people are keen to communicate with members of their tribes, and actively manage the way they do so. They experiment, they reinvent, they chew up technologies like candy, all in the name of getting in touch more effectively with their networks. Presence awareness technologies—technologies that allow people to see who is on the network or even where they are or what they are doing (talking, sending e-mail, browsing)—are likely to find ready markets among the younger consumers who have a keen desire to know where their tribe is and to opportunistically connect with those in their vicinity as needed.



Network Roles Divide the Labor

Networks take a high degree of management to keep them going. But it doesn't make sense for all members of a network to perform the same activities over and over again. It's just not efficient. To keep networks running at top efficiency, the labor is often divided among members.

In this way, some members' roles in networks become highly specialized, allowing others to outsource tasks and processes, making their own load more manageable. The tasks and processes are of two types—those that maintain the network itself and those that provide content, say, specific information about how to run a restaurant or where to go for the best windsurfing.

Naomi knows exactly who to go to in her network to obtain different kinds of knowledge—from M. she can learn about the workings of the stock market, J. can teach her about running her own company, and O. is a good model for how to merge work and hobbies. These experts enable Naomi to access vast amounts of information quickly and efficiently.

To me, these people serve as doors to new worlds that I would not know otherwise. If I were just left on my own, my world would be this size, small. But through these people, they open the doors for me to a totally new world. I enjoy talking to them and probably they enjoy talking to me. That way, I get to know things much faster, in a way.

And if I talk to these people, I can obtain information—if I wanted to obtain that same information on my own, it would take me years and years. With these people, they know so much already, so if I have a question, they can answer. If I'm interested in something, they can introduce me to people. It gives me access to more interesting things.

Naomi, 27, Female, Tokyo, Japan

One doesn't always take on a role consciously, or because he or she has the best skills to perform it. A person becomes an expert on IT not simply because she has the aptitude or uses computers the most, for example, but because others get used to her performing that role then come to expect her to continue doing it. Essentially, the group members assign her the role, in this way taking it off their own plate.

Masa, the 23-year-old Japanese student, is known throughout his network for his computer skills. His older sister turns to him for help with selling her children's clothes on Yahoo, Auction. His mother asks him for advice in using both her PC and mobile phone. His high school friends rely on him to keep the community Web site he has created for them up and running. Without Masa, or someone like him, to perform these roles, these individuals would have a hard time keeping their networks up and running.

ROLES THAT KEEP THE NETWORK GOING

“Expert” and “IT support” are just two of the critical roles necessary for the network to exist. Other important roles include broker, organizer, innovator, model of a future self, and edge surfer.

The Expert

Networks need experts to provide the content at the core. People continuously scan their networks to figure out who has certain kinds of knowledge. People turn to Bernard for his technical expertise. Naomi turns to different people for different types of knowledge—design, anthropology, and so on. Ewen is the expert Ann turns to for technology advice. Through this practice of informal outsourcing, networks enable members to access different types of expertise as needed much faster than they could do it on their own.

IT Support

The person in this role provides IT assistance to members of the network to keep them up and running. Given the centrality of technology to network communications, this person is essential to keeping the network connected. IT support often provides technical assistance, and in some cases may even give out equipment and software. For example, David provides assistance to his father and gaming software to his friends. For Bernard, it's important to be useful to others, and this is best demonstrated in his willingness to provide IT support. He helps friends' parents with computer issues, and the friends themselves with homework, games, and iMovies. He describes how he provides support to one of his classmates at university.

We might exchange some ideas, but the thing is, he is computer savvy, but at the same time I have had more contact with the machine. He's doing pretty well, but at the same time I have more experience with

Windows and Macintosh, and with programming. I started learning that for fun, so I've read a lot of books and I've tried different programming languages. I feel like I can step back from it and look at it not just from the student point of view. That's why sometimes I help him.

Bernard, 20, Male, Silicon Valley, United States

The Broker

Brokers connect people or ideas that otherwise might not come together. As such, they serve a critical role in the diffusion process. By connecting different worlds and bringing ideas from one world to another, they often ignite the creative spark that drives true innovation.

Bernard tries to introduce and connect people to each other. Sometimes it works—he has pushed his parents to meet some of his friends and his father has actually been quite flexible and willing to do so—but often people who know Bernard from different realms just don't click with each other; they don't want Bernard to play matchmaker. This summer Bernard will try again—he plans to bring together in Tahiti friends who have not previously met: Samuel (from San Francisco), E. (a young woman from France), and A. (her girlfriend, also from France). They would all stay at his parents' house.

Naoko, a 19-year-old Japanese woman, spent one year of high school in Canada, where she lived with a Canadian family with three daughters. She stays in close touch with the family and other Canadian friends through letters and e-mail, often trying to make sense of life in Tokyo for them. She takes pictures of friends, buildings, and settings around her, describes trends, and sometimes sends small items such as clothing to her Canadian friends. For them, Naoko is a broker of all things “Japanese.”

They love things to know. And they're really interested in Tokyo. 'Cause sometimes it's on news and they know the pictures. So, whenever I can, I take a picture or you know show them what happened or something, they're so interested about it. And so I like telling them about what's happening in Japan and like taking pictures of buildings and things like that.

Naoko, 19, Female, Yokohama, Japan

The Organizer

The organizer orchestrates and plans activities for members of the network. The organizer may specialize in certain kinds of activities, or know everything that's going on. Moira organizes social activities among her theater friends, many of whom attend different high schools and live in different locations throughout Silicon Valley. Like Moira, Luis's mom Rosa sees her role as the social organizer for families in her network.

Interviewer: To all these people, it seems like your family is kind of the stability of social activities.

You know, I was wondering what it is. I often wonder what it is. Luis says, “You know mom, we're always the ones promoting getting together.” And so, I think it's because we, we just keeping trying ... to keep, you know, to stay together.

Rosa, Married with Children, Female, Silicon Valley, United States

The Innovator

The person performing this role comes up with new ideas for just about anything—activities, connections, projects, partnerships. Frank, a 25-year-old Swede, is known among his friends for having innovative ideas. At university he has been involved in various student activities resulting in projects that have brought him to Brazil, Japan, and all across Europe. He has gotten his friends excited about ideas such as starting a radio station (from his closet) and writing a book devoted to coffee (one of Frank’s passions). Although many of the ideas are not fully realized, they almost always result in new experiences and learning for all involved, and much discussion among the network clusters.

We were going to check a couple of things out but we had other things to do at the same time. I mean, we’ve started a lot of things together but nothing much might have resulted from that. At the same time, though, it’s all worth it. Joakim and I, for example, were talking to this publishing house—about publishing a book on coffee, but nothing came of that. Another good coffee book was published at the same time. But I felt like I learned a lot from that experience—things like that.

Frank, 25, Male, Gothenburg, Sweden

Models of a Future Self

For young people, especially teenagers, the most vivid concept of “self” is that of the future self. They are in preparation, in a holding pattern, for the future. Most of them are grooming for college, for when they are working, for when they are independent of their parents. Not surprisingly, such young people turn to others as models for what they

might become—for trying out and putting together these future selves. Such role models include someone like the cousin of Khanh, a 16-year-old Vietnamese American, who is a few years older and is experiencing many things Khanh expects to go through in a few years. Her cousin’s experiences prepare her for this future.

Now she goes to U.C. Davis. She’s majoring in [pre-med]. That’s what I want to do, so I talk to her about it, and she kind of talks to me, so we’re pretty close. ... I just look up to her because she does well in school. And I like how she handles things in a mature way. My parents like her too; they say I should look up to her.

Khanh, 16, Female, Silicon Valley, United States

Networks can contain negative reflections as well as positive ones. Negative reflections show a future self that may not be so desirable. For example, Georgina’s negative reflection is a friend who dropped out of school and works in the post office, making very little money. Seeing what happened to her friend motivates her to study hard so she can get into university. Masa, a successful young Japanese man, observes a friend who has arranged his entire lifestyle around windsurfing. While Masa, who is quite keen on achieving a good career and the wealth that can go with it, is not condemning his friend, he still sees him as an “extreme reference” for an alternative self.

The Edge Surfer

This person tests boundaries, pushing the limits of the network’s usual activities and values while at the same time providing vicarious thrills for the rest of the network. For example, Julio, the 18-year-old living in the San Francisco Bay Area to attend the Culinary Institute of America, and his friend M. test

the boundaries of their network (and sometimes the law) with some of their adventures. Julio describes their activities.

And then there's [M] ... he is one of those fun-loving criminal guys. He will do whatever ... mostly mischievous things, like when we go to the country club and take people's doormats and put them on other people's—switch them around, like the Chen's are now the Rodriguez 's. We go do scary stuff, like those haunted houses up this road up here. M and I will go, always find a new one, kind of like overcoming fears. Like there's an abandoned barn over here that we haven't done yet, a lot of the adventuring.

*Julio, 18, Male, Silicon Valley,
United States*

WHY IS THIS IMPORTANT?

For businesses it is important to understand that people are involved in more than one network cluster at a time, clusters based on identity, geography, values, interests, or other classifications. Though the roles required in each of these clusters may be the same, the people who fulfill them will not.

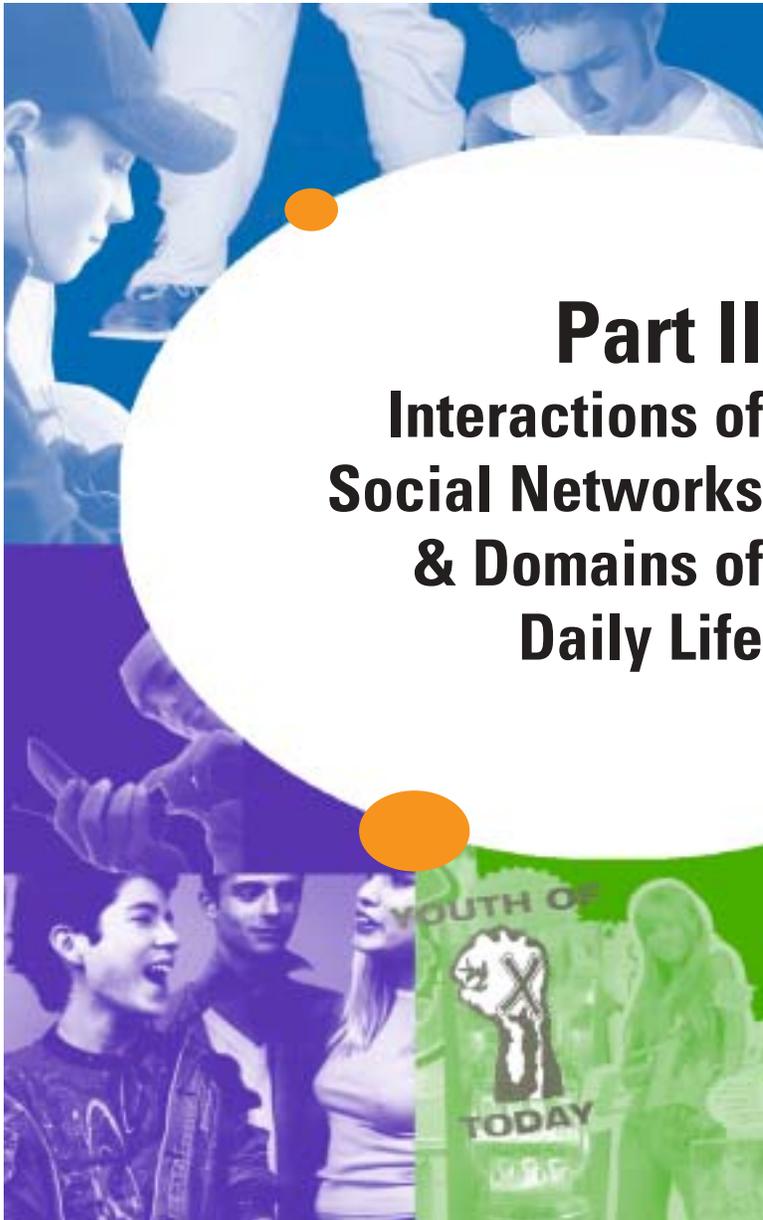
Individuals Play Many Roles

In each of the clusters they're involved in, individuals may play different roles. As a result, it is erroneous for businesses to assume that it is possible to segment consumers according to roles. The roles vary across clusters—one may be an IT expert in one cluster and a novice in the other.

Roles Are Context-Specific

When trying to target people according to the roles they play, businesses must understand that roles are highly network- and context-specific. Thus, rather than targeting someone as an innovator in general, businesses must be able to communicate with this innovator, in this social network, in this context

For example, Naomi, in Tokyo, illustrates this best. She switches between many roles in her clusters. In her family, she is the little sister, but she is also a mentor for prospective students for the college she attended in Wales. She is a young professional, fluent in English, and a woman, and as a result she takes on several roles in her professional network. She is a translator of ideas relating to youth for older colleagues in her company, for example, but she is also a disciple to a colleague who has great experience and an extensive network in her field. She is an innovator in her father's alumni network, which she joins occasionally at special gatherings, always bringing in new ideas and a fresh perspective much appreciated by the older group. She is also a broker and sense-maker in her Japanese business clusters because she is bilingual and can bring people from different disciplines, languages, and cultures together.

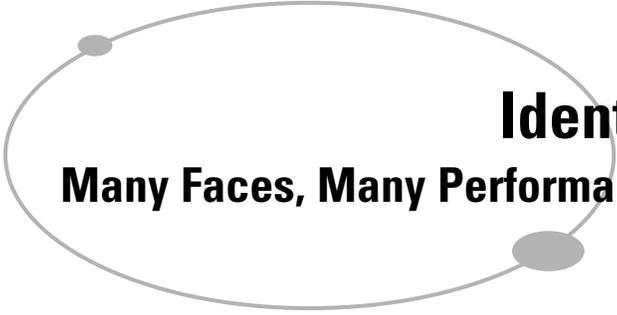


Part II
Interactions of
Social Networks
& Domains of
Daily Life

Part II

Interaction of Social Networks and Domains of Daily Life

Abundant connectivity is driving changes in the architecture of young people's networks. In Part I: The Architecture of Social Networks, we point out how the ability to cross multiple boundaries of geography, institutions, ethnicity, interests, and values, requires businesses to redefine traditional dimensions used for analyzing and segmenting consumers. In Part II, we analyze how the changes in the architecture of social networks, their extensive reach, shapes young people's every day lives. Specifically, we analyze how networks are put to use in several important domains—self, family, work, school, public spaces, mobility, and entertainment—and look at the implications of network effects in these domains on the next generation of products and services.



Identity: Many Faces, Many Performances

We all know the story. We grow up, become independent of our parents, move away, and develop our own interests, friendships, and, for many of us, our own families as well. We think of ourselves as mature adults. We do adult things. We get a real job, buy cars, pay taxes, make mortgage or rent payments. Then vacation comes around, we go to a family reunion, or the parents come to visit us, and suddenly we're children again.

What happened to the mature and independent adult? Have we changed back in an instant, entered some time warp where we've shrunk into our childhood body? No, it's not we who have changed but the context. We have returned to the old context of "son" or "daughter," a context with a different set of rules and rituals from the adult context we've grown into. We return to our "child" identity, put aside the adult one, and assume a different role.

Family, however, is only one domain of the wide-ranging networks of the young people we interviewed. As discussed in Part I, many young people live in many worlds at the same time—their networks cross numerous boundaries of family, ethnicity, geography, institutions, and so forth. Each of these subgroups creates a different context for interaction, calls on a different part of a person's self, presents a different platform for an individual to exhibit aspects of his or her identity. As in a certain kind of Chinese play, in which performers have to quickly switch masks throughout, the highly connected young people we interviewed are required to cycle through the range of their personas as they move in and out of multiple contexts throughout the day—identities of son or daughter, colleague, friend, music fan, Asian, American, IT expert, student, teacher, what have you. Each context calls on the individual to wear a different mask, put on a different performance.

FROM MULTITASKING TO MULTICONTEXTING

People live in a world where they have to shift across the range of their identity and their various roles and responsibilities as they interact and communicate with other people, institutions, and communities in their social networks. It is not uncommon for people to cycle through the range of their persona—colleague, sister, leader, learner, fan, parishioner—through the course of the any given day. The ability to shift in and out and among identities and roles is what we call multicontexting. Multicontexting is distinct from multitasking—doing more than one thing at a time—rather it is the ability to read the environment or context one is in and call upon those aspects of oneself, for example, cultural identity, personality, expertise, knowledge, or language, that the situation requires.

We saw many examples of multicontexting during our observations. Luis, for example, is a 19-year-old in Silicon Valley, whose parents are from Argentina. According to him, he has little connection with the old country and never speaks Spanish at home. Nonetheless, Luis quickly displayed his Latino identity while shopping at the electronics store where he used to work. When he spotted a Latino salesperson he knew, Luis greeted him in Spanish and proceeded to have an animated conversation in that language. In the process, his whole body was transformed—he became more outgoing, slapped the salesperson on the back, and exchanged jokes in Spanish. He had changed identities so that both he and the other person would be more comfortable given the context of their meeting.

Similarly, Bernard, a 20-year-old engineering student in Silicon Valley, displayed the same ability to multicontext during interview sessions and observation. Bernard is French, yet he has the keen ability to transition in and out of languages and types of conversations depending on the context of the social encounter. With some friends at his university, he easily assumes the identity of “Californian Dude”

and has conversations about hanging out, parties, and has learned how to chill out. With other friends or acquaintances in the technology industry Bernard becomes the typical Silicon Valley technology geek and enters into conversations about technical issues or political conversations about platform preferences. Bernard is also very aware of when it’s important to emphasize his Frenchness. Being French has been particularly valuable connecting with French entrepreneurs and startups in the Valley but also with the opposite sex.

Multicontexting is not unusual for the young people we interviewed—they are natives in this new world. Arthur, a sociology student at the University of Helsinki, is comfortable with the idea of having multiple identities and seamlessly moving between them.

Interviewer: You said you kind of have a whole different identity in different situations. Where does that come from?

It’s this modern way of thinking that makes it inevitable, even trendy. Pursuing just one, true identity has by now become a rather strange idea, to be frank. It’s only natural that a person has many different roles.

Arthur, 25, Male, Helsinki, Finland

The increasing reach of people’s networks enables them to cross multiple boundaries of ethnicity, geography, interest, function, generation, and family, thereby creating multiple contexts they have to negotiate daily. This has led to the evolution of new multicontexting skills—switching identities, moving between different selves in the course of a day, sometimes an hour, which makes it all the more difficult for marketers to track consumers. Not only will companies have to find out where their customers are among numerous domains, both in the

real and virtual worlds, but also who they are at a particular time.

PERFORMANCES ARE A KEY PART OF NETWORK ACTIVITIES

The growing need to multicontext throughout the day—to shift from one role to another and back again—becomes, in essence, a series of performances, performances in which the individual puts on different identities, sometimes with the help of actual costumes and setting changes. Such performances have become important ways for people to create their networks and participate in them.

Among the participants, Naomi was the most explicit about her performances. Indeed, she consciously puts on different “acts” as part of her network activities. She calls it “life as theatre.” She explains how, at the beginning of an encounter, she may remain quiet, to figure out what kind of performance will make her most interesting, then she puts it on. In most situations, she wants to be noticed, so she may wear a sari in the middle of Tokyo, for example, or carry a handbag in the shape of a dog, or buy a Guinness stout in a bar. She explains it this way.

I can choose how I want to be. I think people constantly think about how they want to present themselves, or how you want to be seen to make it interesting. But in order to do that, you have to have enough information, so maybe, for the first time, I'll be quiet and see how things go. I try to see how I can present myself. Maybe I wouldn't do it [be too different or try to stand out]. It all depends on which kind of circle that you go. If it was a normal business meeting, sometimes it's better not to be recognized. Whereas if it is a very sort of eccentric community

then you have to make sure you're noticed and you're remembered. That way, it gives me a better chance to meet more people.

Interviewer: You kind of present different personalities in a way, depending on the situation? Do you think about it or do you just let your other personality emerge?

I do think there are sort of different bits and pieces of different personalities from which I choose.

Naomi, 27, Female, Tokyo, Japan

Sometimes performances like these require an actual change of costume and artifacts. Naomi is careful about what she wears and what she carries around. She describes it as a “strategic choice” for a given performance.

Apart from the fact that I enjoy dressing up, wearing this and that, it's also a very strategic choice. ... I always called the clothes that I wear when I give (business) presentations “my costumes,” because I feel that it is a costume that I wear and I have to make sure that I impress people. Oh, you know, she wears something different, she must be different, she must be giving a different speech. It always helps ... Whereas when I go with the president, he's a former bureaucrat and he's almost 70, I don't want to embarrass him. So I would wear normal, sort of more traditional clothes.

Naomi, 27, Female, Tokyo, Japan

It is not only her clothes, but also the way she talks and what she talks about that become a part of Naomi's performances. She likens herself to a

famous Japanese artist named Morimura Yasumasa who became popular in 1980s by dressing as different characters.

I was reading his book the other day, in fact last week, and he wrote that he feels like he is a character in a very famous Japanese animation, Gundam. The hero of the animation wears what they call the mobile suits, “mobirusutsu” in Japanese. It’s like a robot but as you can tell from the word “suit” it’s also something that is part of you. ... And Morimura Yasumasa was saying that when he dresses up as a different personality, he feels like he’s the hero of this animation. ... Because he is inside and he is watching his appearance change and how people look. And I feel exactly the same way.

Naomi, 27, Female, Tokyo, Japan

Pam, a 23-year-old college graduate living in Glasgow, is also aware of the performances she puts on in different situations, with different groups.

I don’t try to look similar, just like myself, I don’t think that this is situation dependent, rather it is dependent on my personality, perhaps I would try to look similar in work situations, as this is not my style so I would have to copy the accepted style ... [Appearance matters in each situation because] I am always aware of how people perceive each other and in that respect appearance counts. The only situation where appearance doesn’t matter is with very close family and friends

and boyfriends, but only in really relaxed situations.

Pam, 23, Female, Glasgow, United Kingdom

Whether it is Pam in Glasgow, Naomi in Tokyo, or Luis and Bernard in Silicon Valley, each of these young people and many others we interviewed juggle multiple selves by means of performances involving different costumes, technologies, conversations, mannerisms, and so on to fit a given context. Such performances, in fact, are a regular part of their network activities.

WORKING ON SELF

Sifting through multiple identities, putting on performances, strategically choosing costumes and artifacts for each context or performance takes work. In fact, working on the self or developing a range of selves that make one attractive to different network clusters takes up a large part of a young person’s time these days. It’s as if “self” can be thought of as a creation, a commodity that an individual can shape or modify to increase its value.

Naomi, for example, works on standing out despite the traditional emphasis on conformity in Japan. She works hard on being an “interesting person” to guarantee her entry into diverse groups in her network. She goes as far as wearing a sari to be noticed in this way.

If you’re Japanese and walk around in a sari in central Tokyo, or not even central Tokyo, people stare at you and people start talking to you. It’s really funny because if you’re dressed like this [she indicates her everyday clothes], no one’s going to talk to you. [But if you wear a sari] people will actually come up to you and say, “How do you wear this?”

What's it like underneath?" People will come and talk to me.

Naomi, 27, Female, Tokyo, Japan

For Naomi, the work of making herself interesting pays off. People are attracted to her because she stands out in a crowd. Indeed, her father likes to bring her to meetings with his network of university friends because she offers a “fresh perspective,” and “new ideas.” When Naomi doesn’t come, his friends ask her father why he didn’t bring her. Similarly, when she wears the sari, people in Tokyo come up to her and start conversations. “Interesting people”—writers, entrepreneurs, photographers, artists—whom she meets through work notice her and make her a part of their social circles, giving her entry into worlds she would otherwise not know. These new worlds she has access to in turn become sources of new ideas and knowledge that she leverages for work or personal use.

While Naomi works on “being interesting,” others we interviewed also work intensely on building their many selves. Sometimes they have help. The parents of Moira, a 13-year-old in Silicon Valley, for example, work on making her more global. They feel that this will be an asset for her in the future. Bernard, the French engineering student in Silicon Valley, works on being “useful” to the many surrogate families, step siblings, and friends in his network by supplying them with IT support, help with homework, and making iMovies. Bernard views his being “global” and having grown up in different cultures as an asset that he offers to his network and hopes to capitalize on in building a company later on.

It just happens that I grew up this way [around a lot of different cultures]. So if I can incorporate most of my experience with different cultures, then I will do it.

Bernard, 20, Male, Silicon Valley, United States

While being “global” comes naturally to Bernard, most of the Japanese young people we interviewed had to work hard to become “global,” going for extended periods of study in the United States, for example, and hoping to expand their networks there.

Whatever aspects of themselves people work on, they are expending a great amount of effort on fashioning different selves that make them attractive to different clusters in their networks.

WHY IS THIS IMPORTANT?

The ability to switch identities seamlessly from context to context is a key defining characteristic of today’s younger generation. Technology, particularly mobile devices, make people more reachable, and by a wider range of people. This requires them to multicontext more often and quickly. Jokko from Finland puts it this way.

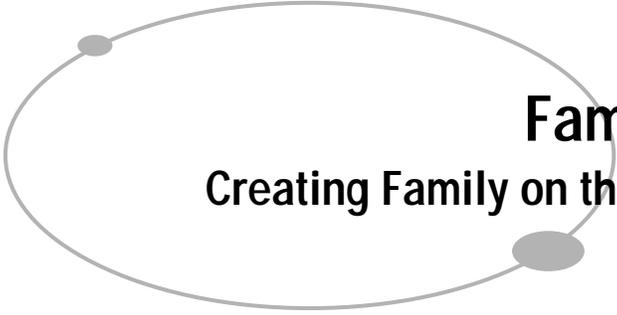
I wish we could understand, in say five years from now, the way these small gadgets totally combine work and free time. Friendship, love, looking for a sex partner, and on the other hand work and all the rational things. We are not used to going back and forth in these two worlds. We went to work and came back home in the evening. Now these worlds are completely mixed on the small screen. It's difficult for me to skip from [one to the other] ... if you've just had a meeting and receive a romantic message and ... in an instant [you] feel romantic.

Jokko, 30, Male, Helsinki, Finland

- *Generational differences.* It is important for businesses to take multicontexting into account as this generation enters the labor force. For one

thing, the younger generation is growing up in the world of multicontexting, but the older generation did not. When adults shift across several tasks related to work, home life, children, personal affairs, and so on within the span of two hours in the morning it is a source of stress and overload. The younger generations have different practices and protocols for managing identities.

- *New tools and services.* The increase in the need for multicontexting in daily life raises the demand for tools and services that help individuals move seamlessly between multiple identities. Such tools may include devices that change color, images, data display formats, and easily navigate between data sets from different contexts.
- *Importance of context-specific marketing.* In order to target product or service offerings, companies must work to understand the context in which they find their customers at the point of contact. This calls for context-specific marketing—understanding the context the person is in at a particular point in time and targeting products or services to that context.



Family: Creating Family on the Fly

Young people identify familial relationships as special—particularly deep, enduring, and wide-reaching—compared to others in their network. Such relationships are often reserved for people with whom they connect at a deeper level or who satisfy needs no one else is able to. Our participants often identified “family” as those who “know everything about me,” those who “know me as a whole person,” or those whom “I share everything with.”

While the family domain is the most pervasive and enduring in a person’s network—all the participants use the term “family” to identify relationships of special importance to them—what constitutes “family” often extends well beyond the boundaries of traditional kinship ties. Indeed, nowadays “family” may include many other people who perform various familial functions—provide emotional support, guidance, and physical infrastructure, for example. For many people, family may include more than one set of surrogate parents and siblings, close friends, mentors at school or work, stepparents, host families, and others. In fact, each person may have a different idea of what “family” means.

Even a concept like “household” is not as easy to define as you might think. Our research has found that the concept of household has extended beyond the physical boundaries of home to include many other people and locations. A household may now comprise nannies, gardeners, aunts and uncles, teachers, tutors, and others who perform various functions for the family. What’s more, many so-called household tasks, such as making shopping lists, creating family schedules, or planning vacations, are now performed outside the home—at work, on the go, in public places. To capture the way people actually live in the 21st century, concepts like “family” and “household” must be expanded well beyond traditional definitions.

FAMILIES ARE CHOSEN NOT GIVEN

Indeed, young people today increasingly choose the configuration of their family—who is in and who is out. To them, family is not a given. It is neither the traditional nuclear family nor even the extended family of blood relatives but a network of relationships with people of all kinds who perform the functions attributed to traditional family. Each family unit (i.e., network cluster) serves a particular role and inhabits a unique place and time in the person's network.

Lisa, a friend of Georgina, a 17-year-old in Sweden, lives with her biological mother and older sister. Her stepfather used to live with them, but he and her mother broke up a year ago, and he moved out of the house. Nevertheless, Lisa considers him to be her father and she now splits time between the two homes. At the same time, she doesn't really have a relationship with her biological father, even though he lives in Stockholm, too. She has only met him twice in her life—once when she was 8 years old and again when she was 15. It's not surprising, then, that she has no relationship with her step-siblings from his later marriage, either. By contrast, she has a very good relationship with her stepfather's four sons and meets them regularly. Both the father and the stepfather are from Chile. Lisa has visited the stepfather's family on trips to Chile but not her biological father's family.

Lisa has chosen the family that satisfies her needs, even though it did not include her biological father and his other children. She chose the father and siblings she felt closer to. Similarly, Khanh, a Vietnamese high school student in Silicon Valley, chose to integrate her close friends in the neighborhood into her family, along with their parents. She calls these siblings "street" brothers and sisters.

[Dang] is like my street brother, as in we were like really close, but though not blood brother, we call each other brother and sister.... So we're very

close. Then I met his parents, and their parents met my parents, and they got close, too. Then his mom wanted me to call her a Godmother and him, a Godfather. So I ended up calling them mother and father. So we got very close.

Khanh, 16, Female, Silicon Valley, United States

Bernard has surrogate families throughout the San Francisco Bay Area, as well as in Germany, Japan, and France. These families have come into his network through his parents, work, or school. These are families he is always welcome to drop in on; he even has a key to their homes.

So that is also a household [for me], because I spent a lot of time.

Interviewer: Samuel's is another household?

I can always sleep over and I have the keys. That's a sign.

Interviewer: That makes it a household.

[Laughs] I have the keys of Cindy's, also.

Bernard, 20, Male, Silicon Valley, United States

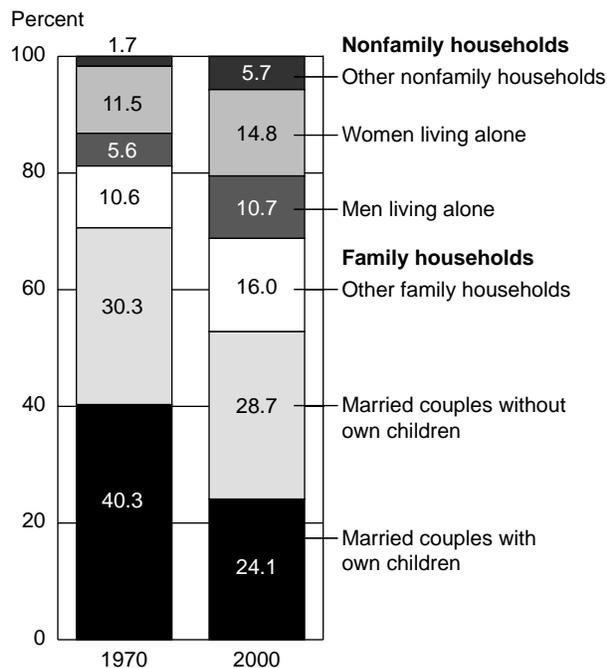
Julio, an 18-year-old in Silicon Valley, lives part time with his mother, with whom he is not particularly close, and his siblings. He visits his biological father infrequently since he doesn't want to be a burden to him, financially or emotionally (his parents are divorced). Instead, he spends most of his time with the Deleons, an African-American-Filipino family whose matriarch is a good friend. The relationship began when Julio dated their daughter, Sandy, but it became more familial as time went on. Although he no longer dates Sandy, Julio considers the Deleons his family.

In this way, family is not a given to the young people we interviewed. They carefully craft and choose those they want in their family, many of them outside their actual kinship group.

NOTION OF HOUSEHOLD IS PLACE-AND TIME-SPECIFIC

For many youths with networked families, the concept of household is just as malleable as that of family. It's not necessarily one specific place or set of people but a number of places and groups of people, a moveable entity, reconfigured based on where the individuals find themselves. Indeed, data shows that the percentage of teens living with both parents in the traditional nuclear family has decreased (see Figure 14).

*Figure 14
The Traditional Household Is in Decline
(U.S. households, percent distribution 1970–2000)*



Source: U.S. Census Bureau, Current Population Survey.

Georgina is a good example of a person with more than one household. During the year, Georgina's household consists of her mother and stepfather; in the summer, her household is in Canada with her father, stepmother, and stepsister. Each household has different rituals, different sets of activities, different rules, and different networks of resources associated with it. For example, Georgina does not speak Russian at home in Sweden, but does speak Russian during the summer with her family in Canada and the United States.

I am quite fluent (in Russian) but I forget during the year. So I have to get started every year when I land in Canada. I have to force myself.

Georgina, 17, Female, Stockholm, Sweden

She also has a different set of friends, including boyfriends, associated with each place. In preparation for her annual trip to Canada, she is making plans to re-engage with Mike, her boyfriend in Canada from the previous summer. Mike is her "summer" relationship, associated strictly with her Canadian household.

What's more, the rules in Canada seem to be stricter than in Sweden. While Georgina openly talks about boyfriends with her family in Sweden, she doesn't share such information in the Canadian household. For example, she is not planning to tell her father about Mike.

I am sure he won't be against it, but I am not sure he'd let me see Mike alone if he knew. I don't know and I don't want to risk anything. My dad is no tyrant but I don't know him that well. I didn't grow up with my dad. I don't know what he thinks about those things.

Georgina, 17, Female, Stockholm, Sweden

Rick, a 17-year old Straight Edger from London, also splits time between his mother's and father's homes. Each household has its own infrastructure, its own set of rules, and its own resources for Rick. He feels at home in both places, but his father's home is more liberal, and this is where he prefers to hang out with friends. For one thing, he is passionate about playing his guitar and can only do this at his father's house. His mother prefers a quiet home and Rick is able to engage in stimulating conversations with his mother and others there. A double infrastructure has other benefits as well. Rick describes how he occasionally plays his parents against each other when it comes to receiving money, for example.

No, it's like, sometimes, you know, I'll be going out, "I need some money to go out, Dad." He'll go, "Alright then." Then I'll go to mum, "Mum, I need some money to go out with," then I can go out like double the times.

Rick, 17, Male, London, United Kingdom

Rick, Georgina, and others we interviewed are similar to many young people in the United States and Western Europe in having to negotiate the boundaries of space and time among multiple households and families in their lives. Businesses must learn to negotiate these boundaries as well if they are to reach their customers where they live, quite literally.

FAMILIES SPECIALIZE

In a networked family, each node specializes, providing different sets of resources, activities, rituals, and infrastructure. Young people know what each family node is "good for" and thus can choose which one to turn to fulfill their needs. For Rick, his

father's house has come to serve as a place to hang out for him and his friends. Christina, a 17-year-old high school student in Silicon Valley, explains how her ROTC master chief became like a father to her. She often goes to him when she has problems or needs advice rather than to her biological father.

Even if I couldn't go to my dad about some of my problems, I went to Master Chief. Sometimes Master Chief was like my second dad. He took care of me. He watched out for me, made sure I didn't get in too much trouble. Master Chief has always been there for me ... He was always somebody I could talk to about anything.

Christina, 17, Female, Silicon Valley, United States

The family of David, a 15-year-old Chinese-Vietnamese American in Silicon Valley, includes several boarders at his house who tutor him.

If we rent these two rooms, probably nine to ten people [will live in the household]. That's like our max ... some go to Evergreen. Some go to San Jose State, and stuff like that. Like they can help me with my stuff, my mom says. And mostly like people who speak Vietnamese and Chinese, mostly those people.

David, 15, Male, Silicon Valley, United States

Each person or node in the extended or networked family serves a particular function, fills a specific niche in the young person's life, and provides unique sets of resources. If business can learn to leverage these unique functions, they, too, can become part of these special networks.

WHY IS THIS IMPORTANT?

The family or household is an important unit of analysis for marketers because many purchasing decisions are made there. Traditionally, companies estimate total household income, numbers of people in the household, and many other household variables (for example, geographic location, ages of children, life stages) to target their products and services. However, these measures may not work going forward because people are increasingly able to choose what constitutes their own family/household. Family configurations are much more idiosyncratic and dynamic than the demographic data alone suggest. The new family/household configurations are highly fluid and change from time to time and place to place. With the growth of these kinds of networked families, companies need to:

- Understand different types of family/household configurations.
- Identify what roles different people play within different family/household networks.
- Rather than targeting households, increasingly think of targeting individuals based on what their roles are in the household/family network and when and where they are playing them.



Social and Work Networks Are Intertwined

For many young men and women who work, there is little distinction between personal and professional networks. They actively use personal networks to find work, to gain general knowledge, and to obtain just-in-time information quickly and efficiently. For some, visions of their future companies look very much like their social networks, and include a careful calibration of what roles and functions each node is likely to fill.

Indeed, many young people view social networks as assets that have value in their own right, assets that assure them that no matter what happens to their current work situation, they will have something to fall back on. Extensive personal networks give individuals the freedom to take risks they otherwise might not be inclined to take, or even to walk away from their jobs altogether. In this way, social networks are changing the nature and meaning of work. What work is, how it is conceptualized, how it is found, created, and performed are more and more determined by the strength of one's social networks.

PERSONAL AND WORK NETWORKS OVERLAP

Bernard, a 20-year old French student in Silicon Valley, speaks of founding a company in the near future based on his network. Virtually every person in the network—college friends, surrogate parents, college professors, current and former landlords and roommates—have a specific role to play in this future company. For him, any of these people are potential clients, partners, funders, or employees of Bernard Inc. Bernard speaks of making a company, and how that company will be based on his network.

It's not like I've got this network and I want to make a company. If I happen to make a company then I'll try to incorporate as much feedback from people that I have. It's based on my experience with my different friends. I've been supporting and helping them with technical stuff. I know it can get frustrating. Sometimes the software doesn't really do what they want to get. So it's not that I'm trying to have a group of people and after it all, now I can make a company.

Bernard, 20, Male, Silicon Valley, United States

So there will be a few people from his network that will be in the company; others will contribute feedback about how to proceed; still others might wind up as partners of the company.

Even if they are not part of it, I will push to have a partnership with them. If I'm successful, I want to make sure that I'm doing a partnership with whatever business they have.

Bernard, 20, Male, Silicon Valley, United States

People he thinks of for input include one of his fictive American mother's son-in-law, his landlord, a connection he met at the Apple developers' conference, several of his professors. What he would want, for example, from the Apple connection is:

Just advice and maybe meeting people that would be interested in what I'm doing and that he already knows. So like that.

Bernard, 20, Male, Silicon Valley, United States

Bernard's vision of his future company and his social relations are closely intertwined. The network meets both expressive and instrumental needs and includes people Bernard relates to personally and likes to hang out with. Indeed, he is reserving a special place for these people in his future company. Instrumental and expressive activities are virtually inseparable in Bernard's network and those of several other young people we interviewed. Anton, an 18-year old student in Sweden puts it succinctly:

I don't think I've really put friends or people in the network just there for a function. But I think if you know them already, then it makes it easier for them to play a function.

Anton, 18, Male, Stockholm, Sweden

In other words, you wouldn't put someone in the network just to use them, but once they're in the network, it's okay to turn to them for help, advice, connections, and so forth.

For Arthur, who is a freelance technology consultant for new media companies in Helsinki, work and personal relations overlap to a high degree because many of the people he meets in the course of his daily life are both potential partners for new projects and potential friends, and for much the same reasons—they all share an interest in new media. Arthur's interview was full of names of people he

had met through one association or another and with whom he could envision further interactions.

Jokko is linked with Tapio, who I also meet every now and then. Maarit is a new interesting person, who knows Jokko and Tapio as well. It started in Bif, I was at her farewell party, when she left Aula. I also wrote an article to the latest edition of Bif, so that's how I got to know Maarit. One more person to add on the chart is Marsa, the spokesman for Aula, who I have some dealings with. And her boyfriend, Juha, who designs fonts. Me and him are making a Finnish site dedicated to fonts, which is an interesting project. Juha works as a graphic designer for a high quality advertising company. You can of course, if you wish, patch together a site on fonts easily during one weekend.... Going together with this, you could add Jyri and Katastro [an independent media art organization in Finland], this is a new strong link. I've done different things with Jyri, and now he's interested in this project, as he is involved in Katastro.

Arthur, 25, Male, Helsinki, Finland

For Arthur, companies he works for are sources of new friends; these friends, in turn, are sources of new projects, ideas, contracts, and companies. Work, for him, is essentially a hobby and entertainment. Yes, he needs money to live on, but he works for the passion and pleasure of it, and figures the money will come along with it. Work and life are truly intermingled.

WHO YOU KNOW IS WHAT YOU KNOW: SOCIAL NETWORKS AS LEARNING NETWORKS

Each person and relationship in a network represents an area of knowledge or expertise that can be tapped for work or personal use. Innovation requires integrating knowledge from diverse disciplines. As work increasingly becomes information driven, creating meaning out of the massive flow of data and information available is imperative. Like companies that can't do everything themselves and thus outsource parts of their operations, individuals are increasingly finding that they can't go it alone, that they must go to different people in their network to get certain information. In this way, individuals don't need to know everything themselves; all they need to know is who to turn to, to find what they're looking for. This increases the knowledge available to any one person exponentially.

Naomi, for example, who works in an advertising agency in Tokyo, describes how each relationship in her network creates doors to new worlds of information and experiences.

To me, these people serve as doors to new worlds that I would not know otherwise. If I were just left on my own, I would probably have this, my world would be this size, small. But through these people, they open the doors for me to a totally new world. I enjoy talking to them and probably they enjoy talking to me. That way, I get to know things much faster, in a way.

And if I talk to these people, I can obtain information—if I wanted to obtain that same information on my own, it would take me years and years. With these people, they know so much already, so if I have a question, they can answer. If I'm interest-

ed in something, they can introduce me to people. It gives me access to more interesting things.

Naomi, 27, Female, Tokyo, Japan

Networks are so valuable and effective as a source of knowledge that young people often build or join networks for that purpose alone. They place themselves in new contexts or environments or deliberately cross boundaries of geography, interests, organizations, and so on in order to acquire such learning. This activity is facilitated by the abundant connectivity they take for granted. Learning something new is as easy as sending an e-mail, joining an online community, or participating in an online discussion group or chat room. Learning happens easily and just-in-time.

Yoko in Silicon Valley built a network to support her interest in photojournalism. She connected with several older and more experienced mentors to help her out. One is a photographer for a local newspaper; another lives in San Francisco, and yet another is a forensic photographer living in another state. Yoko met the last one at a conference that one of her professors in anthropology—another mentor—encouraged her to attend. She often keeps in touch with them by e-mail.

Many of the people we interviewed participated in one or several learning networks like Yoko's. Learning networks are clusters of people who interact to share ideas and learn from one another. Learning networks do not necessarily have an immediate goal or objective. Rather, they exist as social and professional support. These groups often include a mix of people and experiences, and members are valued for the expertise or perspective they bring to the group, whatever it might be. Many learning networks are informal groups of friends and acquaintances, while others are more formal organizations. They are all designed to maximize the interaction of diverse people and expertise to ignite creativity and innovation.

Frank, a 25-year-old Swedish student, has an informal learning network of friends from school. Taken together, they represent a diverse set of business interests, expertise, and experiences from different industries and multinational companies in North America, Latin America, Europe, and Asia. By sharing access to a single e-mail account, they exchange information and advice. In this way, any member can draw on the sum of knowledge of the whole group.

Another example of a learning network of the more formal kind, is Aula, a new media cooperative in Helsinki. (See text box, "Aula—Networks, Space, and Technology Intersect.") Several of our Helsinki participants were members of this organization, including Arthur and several people in his network—Jokko, Antti, and Virpi. The co-op, housed in a building in downtown Helsinki, seeks to foster innovation by facilitating cross-disciplinary interactions of a diverse set of professionals, students, and entrepreneurs in the new media community. Learning is facilitated by combining access to the physical space with information technologies. Members enlist each other's help both in looking for projects and doing them. In this way they draw on the skills and networks of the whole group—it becomes a network of networks.

Work experiences can be so valuable and interesting that people are willing to do them for little or no compensation. For Anton, a Swedish 18-year-old, learning was much more important than the pay itself in the job he describes here.

I'm taking care of the updates, and now we're in the process of obtaining new technology and they're consulting me. I knew a little bit about databases because I did some work at my dad's company. I was working on their database for about two weeks, and then I learned a lot from scratch. So I was learning all the

time. I probably took quite as long because of this. I was only paid for the two weeks, but I spent many more hours than anticipated. But, it was worthwhile, since I learned so much.

Anton, 18, Male, Stockholm, Sweden

SOCIAL NETWORKS ARE WORK ASSETS

Social networks are strong assets in the work world, and as such are carefully managed. They represent portfolios or toolboxes of knowledge, expertise, and ideas that can be selectively activated and deployed for work, professional development, and learning. Building the right networks gives individuals the freedom to take on projects they like rather than just anything that comes their way; it gives them the freedom to take risks in a corporate environment that otherwise might not encourage such risks, or to simply quit when the work is no longer satisfying or fits with the individual's values.

Naomi, who has an extensive network outside the large advertising company for which she works, is keenly aware of the freedom her network gives her.

[A]t my age, I can choose to stay on at this big corporation, but I can also choose to go somewhere else, start my own business perhaps, or join someone else's business, or maybe I can move out of Tokyo. ... I have a better chance to enjoy what I'm doing, because I feel that I'm doing this out of choice ... So, it gives me certain freedom.

Naomi, 27, Female, Tokyo, Japan

For Frank and his friends in Gothenburg, Sweden, their social network gives them the freedom of mutual aid. To Frank, checking out companies and available jobs on the Internet is a kind of an entertainment. In his network of university friends, the guys tend to look out for both their own and their friends' interests when they job hunt on the Web. They give each other tips on interesting companies and available jobs. Frank describes how it works.

Aula—Networks, Space, and Technology Intersect

A nonprofit cooperative located in the center of Helsinki, Aula is an open community of more than four hundred people working in different fields including science, art, business, government, and non-government organizations. The space, designed for collaborative work and interactions, facilitates cross-discipline connections and allows new ideas and innovations to emerge by blurring boundaries and merging different ways of thinking. At the same time, it offers a simple environment where members can meet, work, relax, and learn from each other. Aula encourages professionals and enthusiasts from various fields to develop new projects together and create more innovative art, science, and technology, with the ultimate goal of improving the quality of life for everyone on the planet.

—www.aula.cc

The other day, I found this position for Siemens, working for both North and South America. It's a position in knowledge management, based in Florida. It sounded really interesting. But there were a lot of applicants. I usually surf around looking at jobs a couple of times a week. Just for fun ... Checking companies I find interesting.

Interviewer: And the Siemens position you found on the Net? How did you find out about that job?

I heard about it through a friend actually. I found out that I was short-listed for that job just the day after I applied.

Frank, 25, Male, Gothenburg, Sweden

WHY IS THIS IMPORTANT?

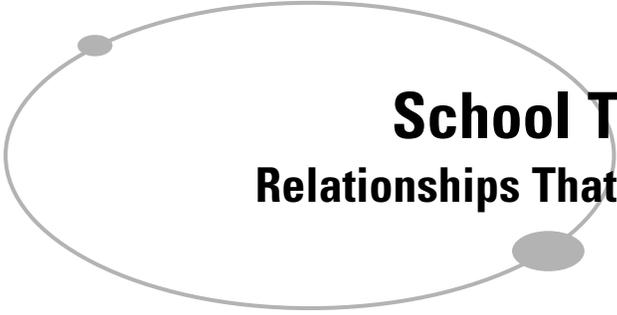
For many young people, the focus of work is shifting from institutions—the companies themselves—to networks. They turn to networks for finding or creating work, for knowledge and learning, for insurance against layoffs or the need to perform work they're not interested in. Indeed, many of them are taking on the role of independent artisan, lone wolves who sign up for interesting work then move on when it's over, confident that their network will provide more work when they need it. To them, the personal and work worlds are closely intertwined. Extensive networks give them a freedom equivalent to that of the wealthy who do things because they are interested in them not simply because they need the income. This change in the nature of work has significant implications for companies.

- *Individual loyalty is shifting from the company to the network.* (See text box, “Networks Change the World of Work in Japan.”) People are working on building portfolios of assets and skills to take from job to job, one of which is their network. Companies need to embrace this and provide individuals with opportunities to build their individual assets by giving them interesting and valuable experiences and assignments. Sometimes, individuals will be willing to do the work for free as long as they gain the necessary experience for the future.
- *People are increasingly taking responsibility for their own learning and knowledge acquisition.* Much of this takes place through one's social network. Rather than assuming paternalistic attitudes toward employees' career management, companies should expand opportunities for people to create learning networks inside and outside company boundaries.
- *As individuals integrate work and personal relations, it becomes increasingly difficult to keep intellectual property within company boundaries.* If one's personal and work networks are intertwined, how do you not talk about work? How do you not share ideas? The rules of Silicon Valley, which thrives on open and dense personal networks in which information flows freely, are likely to extend to other geographies and companies trying to move up the innovation curve.

Networks Change the World of Work in Japan

Traditionally, at least in the post-World War II period, the salaryman—a Japanese man employed by a large Japanese company offering lifetime employment and various company benefits—was the dominant model of work in Japan. Indeed, being a salaryman was desirable. And so for many young people, getting into a good university to get a job at a well-known company became their goal at a very young age. One's social and economic status was often based on attaining this goal. A large company provided job security and in return, its employees were expected to give complete loyalty to the company.

Although this model is still dominant, things are changing. Venture networks and transnational entrepreneurial communities are emerging in Japan. Entrepreneurs are creating alliances and promoting other types of networking opportunities for other entrepreneurs creating a vital infrastructure for new ventures. Many of these entrepreneurs include people who have been educated and worked abroad. They have substantial work experience outside Japan and are leveraging professional and social networks to grow businesses inside Japan.



School Ties: Relationships That Last

Like family networks, school networks are imposed from the outside. Though some people can choose what school they go to, once they choose a school, they're often set down in a readymade environment; their classmates and teachers are essentially chosen for them. At the same time, going to college is an important step toward independence, moving outside the bounded circle. In college, young people do have a choice about who they bring into their network, who they get close to. For these reasons, and because children also spend a good portion of their daily lives in school, school is an important platform on which young people build relationships, many of which last all their lives.

PRIMARY SCHOOLS ARE PLATFORMS FOR LASTING RELATIONSHIPS

For the people we interviewed, the friends they made in primary or high school played significant roles in their networks. Indeed, they often describe them as being “like a brother” or “like a sister,” as “knowing me as a whole person” or “knowing everything about me.” These types of relationships become so significant that many last well beyond the school years.

For Gary, a teacher’s assistant in Silicon Valley from Eugene, Oregon, the friendships from elementary, even preschool are still significant in his life today. These people are clearly a social infrastructure he relies on as do they. Each has a diverse set of interests—writing, music, acting, teaching—but all share the same formative school experience of preschool and elementary school (not to mention Eugene, Oregon’s own peculiar culture) which ties them together. Most of these friends still appear in Gary’s network. Some, particularly those that have followed him to the Bay Area, loom large in Gary’s network and daily life today.

Naomi is similar and describes how a few girlfriends from primary school still stay in touch. They form a small and tight community distinctly different from the rest of Naomi’s network.

There are four of us, very close. We’ve known each other for almost 18 years. Although we don’t meet very often, we only meet once a year, but it still feels very close. These tend to sort of stop there, and it’s not like it’s an evolving community. One of the girls got married and she had her second child last year. So with small kids, it’s kind of hard for her to leave home, so we usually end up meeting at her place.

Interviewer: What kinds of things do you guys talk about?

We talk about the past, nostalgically. And we gossip about people we know, common acquaintances. We also talk about what we’re doing, and especially three of us are single. So, we’re always gossiping about boyfriends and ex-boyfriends and potential boyfriends. This is a very girly community, one of the very few girly communities that I belong to. The others are very macho.

Naomi, 27, Female, Tokyo, Japan

One of the reasons that early school relationships often last well beyond the school years is that multiple bonds unite people who go to the same school—neighborhood, parents’ friendships, culture, social class. For Ai, a 20-year old Japanese college student, her high school friends are special because they grew up together and shared many experiences. This contrasts with her college friends, who come from many different places.

I think those people are my best friends, because they are my friends from high school, who I liked so much. I have such a strong and good memory from high school because I loved everything there, the school itself, facilities, the environment. Also, the students in the high school had the same achievement. We loved English and we loved studying English. And we loved traveling all the time, so we had many commonalities.

Ai, 20, Female, Yokohama, Japan

Masa, the 23-year-old Japanese university student, shows a similar sentiment in his remarks about his friends in Tokyo.

Since most of my friends are from high school and since we've been friends for a long time, whenever we get together at parties we talk about our problems and concerns and our futures pretty often. My friends are very important to me. Especially my high school friends—our friendships are longer than friends from college. Also, friends from high school are from the same hometown. We understand each other better, compared to my college friends.

Masa, 23, Male, Yokosuka, Japan

Georgina's closest friend within the larger group of her friends right now is Lisa. Not only do they go to the same school, they are also neighbors, which makes the friendship all the stronger. Since they are at school together, commute together, go to each other's homes after school, they spend a good portion of each day together. According to Georgina, at first they had different interests "but now since we are so tight, our interests have kind of merged. We see each other so much that now we share most interests."

Lisa and I hang out 24/7 and it's because we live so close to each other. It's almost like living together ... Sometimes we talk on the phone, but it's more like to confirm something, not to discuss.

*Georgina, 16, Female,
Stockholm, Sweden*

For Moira, a 13-year-old in Silicon Valley, school is the center of her social life. Moira has been with many of the same children since kindergarten. Moira sees movies with friends from school, hangs out at malls, attends theater performances, and frequently chats online with them.

The sheer amount of time young people spend together in school, combined with the fact that a lot of their school friends are linked by multiple bonds—geographic proximity, often similar socioeconomic status, parents' networks—make these ties quite strong, often lasting well after they leave school.

COLLEGE—A PLATFORM FOR DIVERSIFYING RELATIONSHIPS

While primary school relationships are important in building deep and often lasting relationships, college or university relationships are an opportunity to diversify networks—meet new people who come from different backgrounds and bring with them new ideas and perspectives.

Masa, for example, who is going to spend a year in college in the United States, sees college as an opportunity to diversify his network.

I would like to make friends (in San Diego) that I can still keep in touch with and visit even 10 to 20 years later ... I would like to make good friends since I've only been in Japan until now. This is going to be a good opportunity to meet people from different cultures. People who grew up in different cultures have different values. I would like to meet those kinds of people. I think I have to respect different values even though I might feel strange. It's a good opportunity to experience that.

Masa, 23, Male, Yokosuka, Japan

Ewen, a 23-year-old who went to university in Glasgow, spent a year studying in Groningen, Netherlands. The year had a big impact on his life—he became interested in foreign languages, learned Dutch, and is currently learning Spanish. He also

became interested in other cultures because he met people from all over Europe and beyond. He often returns to Groningen to visit friends.

It was a big thing—yeah. The first time away from home and I met all those people ... Well, I'd never really tried to learn a language. I wouldn't have met such a mix of people.

*Ewen, 23, Male, London/
Glasgow, United Kingdom*

Arthur, a 25-year-old in Finland, is very explicit about using universities to broaden his network in ways he otherwise would have trouble doing.

I've noted that in Finland it's relatively easy, well not easy, but in a way when your own network expands to contain a certain number of people who then know the critical mass, it kind of feeds itself, for you know that you always have some shared acquaintances. Building an international network is much more difficult. That's why I'm going abroad, let's say in 18 months, I think. I intend to go to Berkeley, to finish my MA degree.

*Arthur, 25, Male, Helsinki,
Finland*

Naomi went to the equivalent of junior college in Wales, where she studied with people from many different countries. Through the school Web site, she connects with other school alums from all around the world. Those planning to visit Tokyo sometimes contact her looking for connections in Japan. Her experience in Wales has broadened her network, making it more global and bringing her in contact with people from different cultures.

YOUNG PEOPLE BUILD INFRASTRUCTURE TO FACILITATE SCHOOL NETWORKS

School networks play important roles in young people's lives. Not surprisingly, many young people create Web sites and other online forums to maintain communication with the members of these school networks. These may include Web sites for various university clubs in Japan, messaging services, e-groups for friends, and so on.

Naoko, a 19-year-old in Japan, for example, has a group of college friends who started their own e-group. Anton, an 18-year-old in Sweden, and his group of school friends use ICQ to connect.

I have my list with friends. I have divided my list into friends, friends I have met on the Internet, and friends from school, including a few teachers, who are also using ICQ. That's really good. If I sit at school and have a question, I can send it off to a teacher instead of having to track him or her down in another classroom or in the teacher's room. So then they either send an answer to my question or they come to see me and talk.

*Anton, 18, Male, Stockholm,
Sweden*

Masa, who graduated from university, built a Web site for his college friends. Since there is little time to meet face-to-face—some are still studying, some are job hunting, others are working already—they stay connected through the Web site.

So I can't see them very often. Also, the people looking for a job in their fourth year of college are planning for their future and what kind of company they want to work for. We also talk about our future plans on the Web page. One of my friends on

the Web message board says, "I am so tired of looking for a job." Other friends say, "I was able to pass the examination to start working for a certain office" and stuff like that. Other friends say, "I am so scared about my future." They talk about these things on the Web message board.

Masa, 23, Male, Yokosuka, Japan

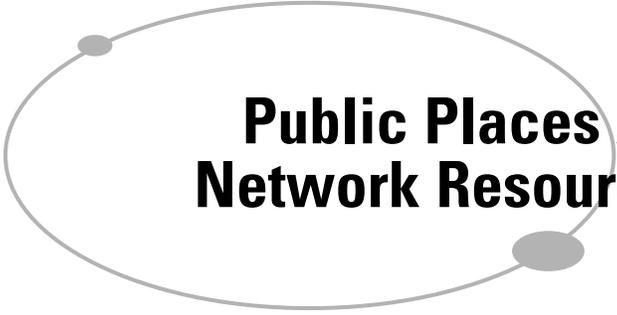
Frank, who is finishing his university studies in Gothenburg, Sweden, has for several years relied on a shared e-mail account for staying in touch with his close circle of university friends. These friends were scattered around the world for long periods of time pursuing internationally-oriented degree programs. The shared e-mail account served as a message board and allowed them to exchange stories and plan trips to see each other.

The point is that people in school networks don't rely on the vagaries of fate to keep the network together. As we discussed in "Network Management" in Part I, many young people actively create the infrastructure they need to keep their networks going.

WHY IS THIS IMPORTANT?

Businesses need to understand the unique role school networks play in shaping product and service preferences. It is also important to understand that these ties often last well beyond the school years and in this way continue to play an important role in the purchasing cycle. Technology facilitates continued interactions with school friends, reinforcing ties going back many years. Identifying school-based networks and the different roles people play in them is important for targeting products and services. Supplying technology infrastructure and products that help school networks endure may well be an important niche for companies.

For example, Classmates.com has been able to leverage this very need by allowing people to reestablish links with classmates in high school and college. It is one of the largest and most successful online personal networking services. Indeed, businesses may also consider ways of working through established alumni associations of the major universities to tap into these important peer markets.



Public Places Are Network Resources

Even with abundant connectivity and the substantial growth of online interactions, much of young people's lives still takes place in the physical world, in face-to-face interactions with friends, family, teachers, neighbors, and others in their social networks. In fact, many online activities serve to support face-to-face relationships—planning windsurfing outings, sharing photos and stories after a get-together, exchanging reviews after a performance, and so on.

PUBLIC PLACES COMPLEMENT ONLINE INTERACTIONS

For Naoko, meeting her closest friends from high school once a month is an important ritual for sustaining their friendship. Each girl takes a turn finding a place to meet that can fit all 15 of them. Though much of the planning is done via I-mode, by means of messaging, the public places facilitate the social interactions that keep their friendship intact.

Actually there are lots of places that you can find for getting together with lots of people, in Yokohama. And we don't really care about the place. We don't have to have a fancy place.

Naoko, 19, Female, Yokohama, Tokyo

In this way, many online interactions, whether they take place by means of messaging on mobile phones, e-mail groups, ICQ sessions, or dedicated Web sites, either culminate in a face-to-face event or are the result of one. Contrary to the once popular belief that communication technologies would sub-

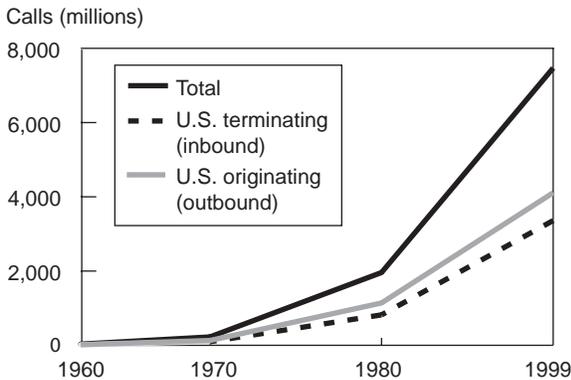
stitute for travel and physical get-togethers, remote technologies and face-to-face interactions go hand-in-hand. They support and reinforce one another. Not surprisingly, growth in communication technologies has paralleled growth in travel (see Figures 15 and 16).

This makes sense if you think about it. The more you contact someone by e-mail, the more likely you want to meet that person face-to-face. The more you see someone, the more likely you'll want to keep in touch online in between face-to-face encounters. Each feeds the other.

Face-to-face activities with groups of friends and acquaintances continue to play an important role in young people's lives. The form these activities take varies widely from group to group—paintball parties for David, monthly dinners with high school girlfriends for Naoko, family barbecues for Luis, coffee shop gatherings for Georgina, and theater outings for Moira.

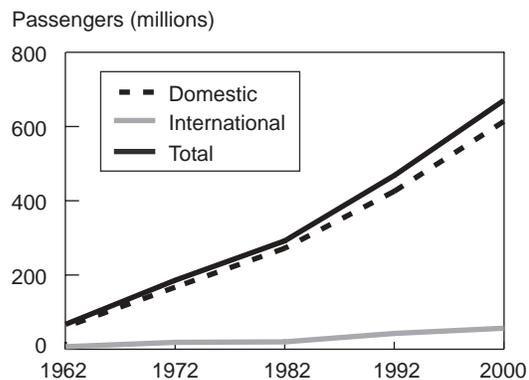
The activities are varied and idiosyncratic—specific to particular groups and the places they meet—but they all take place in public places. These are gathering places, places to hang out, places to con-

Figure 15
Increased Communication ...



Source: International Telecommunications Union

Figure 16
... Parallels Increases in Travel



Source: U.S. Bureau of Transportation Statistics

nect with one another. They include shopping malls, cafés, buses, trains, restaurants, street corners, beaches, and many other places that provide opportunities for group interactions and chance encounters. As times goes on, the group and the places where they meet become intricately intertwined.

PUBLIC SPACE ACQUIRES MEANING

As groups incorporate public places into their very structure, these public spaces acquire special meaning for social networks. Frequenting certain places becomes a ritual activity and a sign of network membership. The stories and experiences tied to these places reinforce group identity. One group meets in one place, another group in a different place.

For example, Georgina's friends from junior high school have been meeting in one café in downtown Stockholm for several years, while her more recent friends from high school have claimed another café in a different part of town.

Right. I split the weekend so that I meet these girls [her high school friends] one of the nights and usually my older friends the other night. We meet in cafés. Friday or Saturday. We [my older friends] go to a café downtown. But, it is a different café from the one I go to with the girls here. We have been hanging out at this café since several years back.

*Georgina, 17, Female,
Stockholm, Sweden*

Anne and Minna also assign meaning to special places. They usually end up in the same two places. One is the trendiest bistro in Helsinki, and the other the trendiest club. Frequenting these two places has become a tradition, a ritual that has come to define their relationship.

And with Minna we always go to this same coffee house and the same nightclub and they're both quite fancy places. So, the places reflect her personality in an interesting way... maybe some people only want to go to the more sophisticated places.

Interviewer: So it's Minna who decides where you're going to go?

No, it's not like that. I like spending time in those places. And sometimes you just get stuck with these habits, like going to certain coffee houses with certain people. And suddenly it's no longer a habit, it's a tradition.

*Anne, 20, Female, Helsinki,
Finland*

Masa, a 23-year-old Japanese university student, and his friends always prefer to meet in their hometown rather than downtown Tokyo. They have their familiar bars close by and can avoid the big crowds and polluted air of downtown Tokyo.

Interviewer: Do you meet in Tokyo when you go out?

No, because most of my high school friends are not living right in the metropolitan area of Tokyo. Most of my friends' environment is near the ocean, or it's close to nature. They don't like being in the central part of Tokyo. They always complain that there are too many people or that the air is too polluted. ... Once we decide to get together, we don't gather in Tokyo. We gather in Yokosuka, Miura, [or] Kanagawa Prefecture.

Masa, 23, Male, Yokosuka, Japan

In this way, these young people are converting public places—impersonal places of concrete, steel, glass, and wood and available to anyone—into their own private spaces. When they physically enter these public spaces and let these spaces contain their interactions, they imbue them with private meaning, making them integral to the group’s experience of itself.

PUBLIC SPACE CONTAINS AND EXPANDS NETWORKS

For some people, they not only interact with people they already know in public spaces, but they find new relationships there. Many of Rick’s social interactions, for example, are tied to physical places throughout London. In these places (for example, Camden Town, Oxford Street, and other music venues) he can tap into pools of relationships simply by chance encounters with people he already knows and people he has yet to meet. If he sees someone at a club over a period of time, that encounter may grow into a new relationship. The Dome, a club in London, is a place where Rick can just hang out knowing that some of his friends will inevitably show up, or, barring that, he can make interesting new friends with similar interests.

Interviewer: What’s the Dome?
What’s special about the Dome?

It’s the most disgusting, disinfec-
tant-smelling place in the whole
world. It’s appalling. We’ve been
going there for like a year and a half.
We got to the stage where any one
of us could go on our own and we’d
still have quite a good night out
because we just know so many peo-
ple there now. So it’s not so much
what they play, because we hate the
DJ there. We just go ‘cause of like
habit. It’s our only bad habit.

But the great thing about this is if
John or Dave decides not to go,

then me and Brian can go and still
meet up. Or if some of them decided
they don’t want to go, they can
come meet up with us [later].
There’s a sort of interchange of who
comes and doesn’t, and it doesn’t
really matter.

*Rick, 17, Male, London, United
Kingdom*

For Rick, these places are important resources in his network, helping him build and expand it, providing structure. Rick describes how some of the encounters with people he doesn’t know grow into more “proper” relationships.

Interviewer: So tell me, how did the
Harrow crew become part of your
network?

We go to this place every week
called the Dome in the top of the
park. In ‘99 we met them. Me and
Brian were at a gig together with
Allison and one of the Lauras for a
brief amount of time. For just a
night. Then we remembered them
and we kept on bumping into them
all the time when we were out. So
we just decided then that we’d just
meet up instead of making it sort of
random. ... We just started becom-
ing proper friends since then and
ringing each other up.

*Rick, 17, Male, London, United
Kingdom*

PUBLIC SPACE FILTERS RELATIONSHIPS

For Rick and other members of different net-
works, these public places become important
resources. They are the medium for physical
encounters with network members, and they serve
as filters for potential new social relationships.

Indeed, many places are associated with certain values, interests, or communities. Rick can make friends with people he meets at the Dome because he knows that, by and large, these are people like him, who value the same things he does. Some of the people we interviewed were quite adept at reading the various identities, interests, and values associated with places in both their physical and online worlds. In this way, people use public spaces as filters for new relationships to add to their networks.

Going out to clubs is a bonding experience for the members of Anne's network. Such events are about dressing up, dancing, and most important having a laugh with friends. While out, Anne is open to meeting new people at her favorite hang outs for the same reason Rick is—because these are people like her. Indeed, when she's at these clubs, she often ends up giving out her phone number to those who ask for it.

Someone can come up to me in a bar and whine that they want my number and I go "okay, okay". And then the[ir] numbers are stuck in my phone. But this was just one example. On the other hand I really like people who want to make contact with other people.

Anne, 20, Female, Helsinki, Finland

By frequenting these venues, Anne collects many potential new relationships by simply adding their phone number to her mobile phone. Later, she might SMS one of them and invite him or her to a party or another event. If there is no contact within a month, Anne simply deletes the number from her mobile phonebook list—instant network management, as described in "Network Management," in Part I.

Arthur, a new media consultant in Helsinki, is part of a network that is more formally tied to a single place—Aula, a new media cooperative in downtown Helsinki. The space, designed for collabora-

tive work and interactions, essentially serves as a gathering place for a network of people with diverse interests and expertise in new media. It's a place to work, to interact, to relax, and to have fun. Indeed, Arthur's network of immediate friends is connected to this larger community. Aula broadens Arthur's social network.

I would like to broaden my network,
and I think Aula will help in this.

Arthur, 25, Male, Helsinki, Finland

At Aula, Arthur can also create relationships with new people. Casual interactions can turn into collaborations and partnerships on a diverse set of projects. In this way, Aula serves as a filter for potential relationships for Arthur and others in the new media community, since everyone there works with new media in some way or other.

WHY IS THIS IMPORTANT?

- *Face-to-face interactions and physical spaces still matter.* Companies need to think about how to integrate physical and online offerings rather than simply substituting one for the other. Online interactions facilitate and enable interactions in physical spaces—they often culminate in a face-to-face interaction or follow it, for example. Companies can make products and services more valuable to consumers if they bring people together, that is, support the formation of community. This can often be done more easily online, but sometimes doing so in the physical world is more appropriate.
- *Physical spaces are important resources for young people.* Place plays an important role in the activities of social networks and offers opportunities for forming new relationships. There are business opportunities in providing the infrastructure for social networks and communities. Aula in Helsinki and Fluid Minds in Stockholm

(a physical community offering infrastructure for independent consultants and entrepreneurs) are examples of spaces that facilitate network activities for people who share professional interests.

- *Public places are imbued with meaning and serve as filters for potential relationships.* Companies need to understand how certain groups lay claim to certain spaces in order to position their products and messages for the right people. Starbucks in places like Japan is a lot more than a coffee shop. For many Americans it is a home, a refuge, a meeting place and even a work space—a familiar place to connect with others in a foreign environment.



Mobile Technologies Change Patterns of Transportation and Interaction

Transportation is an important asset for young people. It gets them out of the house and away from parental boundaries, connecting them to a range of places and relationships beyond the confines of neighborhood and school. Indeed, a good amount of a young person's time and social interactions are spent solving transportation problems just so they can attain this kind of independence. Mobile technologies have become a critical tool in these activities. They can help users find information about transportation, such as train or bus schedules, and then help make the final arrangements.

But transportation, especially public transportation, is not just a vehicle for getting from place to place; it's a public space in its own right. Things happen while on transportation. You can meet new people. You can meet the same people everyday, people who may become part of your network. You can use the time to read, to chat, to contact other people in your network by mobile phone or messaging. In this way, like other, more stationary public spaces, transportation can be a filter for social interactions, a way of structuring them.

Even as young people come to use mobile technologies more often on the go like this, to arrange transportation and set up meetings on the fly, they are changing the norms for social behaviors. Planning is out, and just-in-time interactions are in. This can affect businesses in any number of ways, from how they schedule their work activities to the products and services they provide to support this kind of spontaneity.

TRANSPORTATION CONNECTS YOUNG PEOPLE TO WIDER WORLDS

Transportation gives young people freedom to connect with places and people independently of their parents and parental boundaries. That's why it's a highly prized asset.

European and Asian teens seem to be ahead of the curve compared to their American counterparts. Indeed, lack of sufficient public transportation in most suburbs in the United States, including Silicon Valley where our interviews took place, severely limits young people's mobility and freedom. To reach school, work, friends' homes, sports activities, and entertainment, American teens often have to rely on parents, older friends, arranged carpools, relatives, and so forth. Consequently, young people's interactions in Silicon Valley are limited to just a few settings—schools and extracurricular activities. And even for these, the logistics must be highly planned.

Logistics planning is in fact a key family activity and an important part of interactions in young people's social networks. Moira, for example is 13, and is driven to all destinations by adults. Her parents are the main source of transportation, but she also participates in several parent-organized carpools, such as those to and from school and theater camp. Carpools are carefully arranged and negotiated—who is driving, when, and where. Moira's parents have successfully put together a whole network of resources to ensure that Moira gets to places on time and that someone in the network is available in case a prearranged ride falls through.

Cindy, 16, also gets driven where she needs to go by her mother or by older friends who already have their driver's licenses. Naturally, this has put limits on her activities. Last summer she tried to get a job. Since she doesn't have access to public transportation and couldn't rely on her mother and friends to bring her to work every day, she had to turn down several offers. Lack of access to transportation limited her to work opportunities in the immediate neighborhood.

Because, like Cindy herself, not everyone in Cindy's network drives, arranging parties or get-togethers involves a great deal of discussion about logistics, which tend to get very complicated. Some of her friends have their driver's licenses, and others have learner's permits and are only allowed to drive with an adult. Each friend has different time constraints and different curfews. All these parameters are taken into account when planning a night together.

And I think Kim and the other Kim are not supposed to drive too much, but you know when first you get your license you want to go places yourself. They have rules on that. And I know some people who don't really have a curfew to go home, but the others who are really, really strict. And I think I'm pretty much in

the middle, if I like reason with my mom I will probably get what I want, but if it's too far fetched then she will tell me about it. I think maybe [my curfew is] not past 11.

Cindy, 16, Female, Silicon Valley, United States

Where to meet (maybe in the home of a friend with the earliest curfew to avoid breaking up the get together too soon), who goes with whom (also depending on curfews), and how many can join given the transportation resources available are all questions that have to be considered whenever clusters of Cindy's network get together.

For David, 16, who also doesn't drive yet, activities are confined to friends' houses within walking distance of school and the local park. Public transportation can take him and his friends to the mall, but otherwise he needs to negotiate transportation with elders in his household.

Whereas our younger participants in Silicon Valley and their parents have no choice but to plan, negotiate, compromise, and trade favors with friends and family to get where they want to go, participants in Europe and Japan roam freely in their urban environments.

For Rick and his friends in London, for example, the city is their playground. They go to gigs late at night, via the underground, and often get home in the wee hours of the morning. In their free time, they roam all around London, going to music stores, shopping, or just hanging around.

Similarly, Japanese teenagers spend very little time at home or with their families. After school they roam around Tokyo, using their I-mode phones to connect with each other, making last minute plans, shopping in trendy youth areas like Shibuya or simply hanging around in coffee shops or on the streets. Living in an urban setting with highly developed public transportation makes more places accessible, providing more opportunities for con-

necting with others in their social networks or creating new relationships. For example, Naoko in Japan often gets together with her girlfriends. With an extensive subway system, they are free to explore different towns near Tokyo.

She lives in Chiba, and I live in Yokohama. Between those cities are Shibuya and Harajuku. We also go to Daikan-yama.

Naoko, 19, Female, Yokohama, Japan

Similarly Masa gets together with some of his friends in the middle of Tokyo. The friends converge there from all different parts of the larger metropolitan area.

Well, we usually get together on the weekend around Shibuya Station, and then we look for the information about the good restaurants or good food.

Interviewer: How do you look for the information?

I usually look for that kind of information about gourmet food on the Web site called Yahoo Japan.

Masa, 23, Male, Yokosuka, Japan

PUBLIC TRANSPORTATION—NOT JUST A VEHICLE, BUT A SPACE IN ITS OWN RIGHT

Not only is transportation a means for enlarging one's social network by connecting to people and places outside of the immediate neighborhood, public transportation is also a space for creating new relationships or converting chance encounters into deeper connections. In this way, public transportation is like any other physical space, with the same characteristics discussed in the previous chapter on public spaces. Physical spaces are indeed resources for social networks; they com-

plement online interactions, acquire special meaning, contain and expand social networks, and serve as filters for social relationships. Georgina, for example, got to know Lisa while waiting for the bus.

I kind of got to know Lisa before school started just by running in to her. We had both lived in different places before. We met at the bus stop, since we had both moved to the same apartment complex, and I recognized her and eventually started talking.

*Georgina, 16, Female,
Stockholm, Sweden*

Similarly, Moira in Silicon Valley has a group of “carpool friends”—people she regularly shares rides with. Most of them go to the same school and have developed friendships outside the carpool. But the carpool is what first brought them together, and brings them together still. In this way, transportation can help structure social interactions as well as any other public space does.

COMMUNICATION TECHNOLOGIES LEVERAGE TRANSPORTATION

In all the regions in which we conducted our interviews, the use of transportation and communication technologies was intertwined, but in different ways and for different reasons. As discussed previously, arranging transportation was a key logistics activity for families and young people in Silicon Valley. Putting together carpool schedules, arranging pick-ups, negotiating last-minute stand-ins, and figuring out how to allocate resources are all frequent aspects of phone conversations and online exchanges. For Moira, for example, one key reason for wanting a mobile phone is to make sure she gets picked up from school.

I want [a mobile phone] because I'm going to go to high school far away.

And let's say my carpool isn't there or something like that, you know? Then you'd have to call. That happened to me last week. My carpool couldn't pick me up because the girl was going to a friend's house and the boy was going to a bowling party and so he wasn't there. See, if I had a cell phone that would solve that problem—because I didn't have any money and so I had to go ask the daycare people if I could use their phone

*Moira, 13, Female, Silicon Valley,
United States*

Young people in Europe and Japan, by contrast, use mobile phones intensively to obtain public transportation schedules and, particularly in Japan, where the logistics can be complex, to search out the best routes. In fact, for young people in Tokyo, one of the most frequently used services on the I-mode phone is the train schedule site. Here they can look up the last train home and search for the best connections to get there.

Masa in Japan uses mobile technologies in this way to organize tours of gourmet restaurants. He finds out which ones are good, how to get there, and the best routes. Then he sends e-mails to friends to put the final plan in place:

So I usually send the e-mail saying, “Let's do a gourmet tour” and then I organize it and hold the event.

Masa, 23, Male, Tokyo, Japan

Mobile technologies and transportation are intertwined in another important way. Public transportation allows for an important chunk of time for using mobile phones and other communications technologies. Naoko, a 19-year-old in Japan, is one of millions of Japanese consumers whose use of the otherwise dead time on long subway rides to send text

messages on their I-mode phones. IFTF Special Report, *Innovation Through Reinvention*, SR-716, January 2001, points out how the Japanese urban settings with long commutes on public transportation create ideal niches of time for using mobile technologies, and shape their patterns of use as well. For example, it is impolite to be loud on a train in Japan, so it is not surprising that many people prefer to read e-mail or surf the Internet instead of talking. That's one reason why the I-mode phone has caught in Japan. In urban spaces like these, where people spend substantial amounts of time commuting on extensive public transportation systems, use of mobile and transportation technologies in this way is highly interconnected. The space and time becomes an important messaging environment.

MOBILE TECHNOLOGIES CREATE NEW SOCIAL NORMS

By using mobile technologies in these new ways within their social networks, young people are changing the norms that guide social behavior. In Helsinki, for example, where penetration rates for mobile phones are more than 90% for young people (5-24 years old) and extensive public transportation makes any place in the metropolitan area easily accessible, we turned up a number of interesting social innovations.

Just-in-Time Social Interactions

Most young people we interviewed in Helsinki do not plan their social activities very far in advance. Instead, they negotiate them at the last minute, in a just-in-time fashion.

Anne is a good example. During observation, Anne's meetings at bars and cafes were often preceded by "last minute negotiations" about the exact time and place of the meeting. For Anne, any niche of time while she is on the go is used for communication, which is in itself a new norm. It is no longer uncommon for people to make or take calls in public settings where previously they would not have

done so. Substantial conversation and exchange is done on the mobile phone even while on the way to the meeting place.

Planning Is a Liability

Another new norm is that one should always be available and open to spontaneity, and not be held back by the shackles of planning and scheduling. Rather, niches of free time are filled with people and activities opportunistically. Young people want to be so flexible about when and where and whom they meet, that scheduling and planning in the traditional sense has become a social liability.

This is clearly seen in Henry's network. Henry generally does not plan activities because of his hectic schedule. He attends school, has duties as the eldest brother toward his younger siblings, and works 32 hours a weekend as a security guard. There is scant time for "fun." But whatever time there is for fun, Henry wants to keep it open for whatever opportunity arises at that particular moment.

Well, the thing with it is I don't plan activities. First of all I have priorities. School is number one, second is helping out my parents at the hot dog stand, and third will be work. Whatever [left] will be activities. Let's say I'm at work and Sal calls me, surprises me: "Oh yeah, sure. I don't have work. I'll come over" So it's more like that.

*Henry, Male, Silicon Valley,
United States*

In Anne's network, there seems to be a great amount of spontaneity in when and why people meet. The mobile phone has made it possible to be impulsive. Minna, one of Anne's friends, has a habit of "fishing" for contacts when she is bored. She sends a message "Where are you, what are you doing?" to many people in her network and then

waits for the replies to come in. She then decides based on location and availability whom she would like to meet up with.

Marja also doesn't like to make appointments, and instead prefers to call the same day or a couple of hours before she intends to meet someone. The mobile phone suits Marja's style of meeting people. Her philosophy is to live in the moment.

Interviewer: How do you arrange meetings with each other? Are you doing this in advance, like a week before?

Well, some people like to do so but I prefer not to because I work as a freelancer. So I'd rather make a date for the same day. I might say to someone that we could go and see a movie next Wednesday and then I'll probably cancel our plans later. That's why I prefer to make a date for the same day. That way I can tell if I have to go to work or not. I'm just not good at making long-term plans like that.

Marja, Female, Helsinki, Finland

Marja makes this work because she knows the daily rhythm of her friends, and they hers. In other words, they are likely to know where the others are at a given time of day. The after-work routines and the places that they will be are much more important as an organizing framework than scheduling specific times.

Constant Adjustments

Technology allows Anne and her friends to avoid planning and scheduling social interactions. Instead, they have general time frames, such as meeting after work or after school on Tuesday, and then use mobile phones to adjust the actual timing and location in real time. Because things are generally in

such flux, however, they are constantly adjusting their plans, and often have multiple exchanges right up to the time they meet face-to-face.

WHY IS THIS IMPORTANT?

- *Companies need to think of leveraging niches of time and space in designing and marketing products and services.* Mobile technologies allow people to use niches of time that were previously "dead," for example, waiting for the train, riding the bus to school, walking home, and waiting in the doctor's office,. Such niches of time and space represent important contexts for interacting with consumers. Young people are already leveraging these niches of time and space as effective communication and social environments. Businesses can deliver customer value by fitting product offerings and product experiences into these niches of time. This strategy is already seen in the mobile service offerings of NTT DoCoMo and its I-mode phone.
- *Urban setting, including urban transport system, is an important dimension to take into account when designing and marketing mobile products and services.* There is an intimate link between the urban setting, transport infrastructure, and the reach of people's networks and niches of time available for interaction.
- *Companies can play a role in helping consumers manage the logistics of daily life.* Managing the logistics of daily life (for example, synching schedules, getting from place to place, making appointments, and setting transportation arrangements) is already a key family activity and an important part of the interactions of young people's networks. This activity defines in large part the utility of mobile communication tools. Features that enhance this activity will be important for both families and networks of friends.

- *New social norms will emerge as mobile technologies become more pervasive in people's lives.* Already we see changing social norms among the young people living in areas with high penetration of mobile tools, such as preferences for just-in-time social interactions, disdain for planning and scheduling, the need for constant adjustments to social engagements and the openness to such adjustments. Who gets to set and define the rules of engagement will be the source of tension as the new social norms become more pervasive and intersect with established social norms in businesses and households.



Entertainment Is Not Just for Fun

We traditionally think of entertainment as something we do outside work or school—something to do in our free time, for fun. Our interviews with young people, however, suggest that the lines separating entertainment, communication, work, and learning can no longer be drawn quite so cleanly.

Indeed, young people often use communication as entertainment. E-mailing someone, finding out what they're doing, getting an unexpected message, chatting on ICQ are all done as much for fun these days as to communicate information.

Likewise, the borders between entertainment and work are also blurring for many young people. Many of our participants look to get much more from work than income. They bring their hobbies, their passions, their interests to what they do for work, and expect to achieve a degree of personal fulfillment in return. For many, work becomes a means of expressing their deepest needs for creativity, making things of value, contributing to the world; they merge fun and work into a way of being in the world.

Even video gaming, which many conceive as pure entertainment, has great learning value for young people. It builds their reasoning skills, trains them in the use of electronic media, and gives them experience with teamwork in competitive situations, all necessary qualities for succeeding in the 21st century workplace.

COMMUNICATION AS ENTERTAINMENT

For most young people we interviewed, communication was not only for passing on information or making practical arrangements but for entertainment as well. Moira gossiping with her friends on AOL IM, Masa talking to his friends on their high school Web site, Frank exchanging adventure stories by e-mail with his university friends—these exchanges are as much for fun as anything else.

It is perhaps on the Internet that communication and entertainment are best combined. Most Swedish teenagers participate in “Lunarstorm,” for example, the Swedish Internet community for people 16 to 25 years old. There they can meet potential new friends, have group discussions, browse through other people’s guest books, learn new things, and connect with people far away. Anton, an 18-year-old from Stockholm, is a frequent Lunarstorm participant.

It’s a big community. You can meet people. You have your own user ID and log in. Then I can see if somebody has written in my guest book. There is for every user this personal Web site where you can write about yourself, your life, and also put pictures. You can also search for people according to interests, the school you attended and so on. Then, gradually you build up your own “friends list.” It’s really similar to ICQ. You can list your friends and then you can also write the relation you have to each person. Like if you are great friends or engaged or sister or brother...

Anton, 18, Male, Stockholm, Sweden

Anton has some friends who are totally “virtual,” that is, he communicates with them only through Lunarstorm. Others are both Lunarstorm and “real-

life” friends. He dedicates a lot of his free time to Lunarstorm because it is fun, he can meet new people, and he can also communicate with people he already knows.

Thirteen-year-old Moira, from Silicon Valley, spends 2 to 6 hours a day chatting on AOL IM with her friends. Her parents “throw me off,” she says, only as a punishment when she fails to listen. She almost always begs for just another minute to do this or that. In general, Moira and her parents have a deal about this activity—as long as she keeps her grades up, her parents must leave her alone and “say nothing” about the extent of her IM lifestyle.

Rick uses messaging in a similar way both on his mobile phone and the computer—to relieve boredom, to entertain himself, or simply to relax.

I abuse Duncan because he got a phone recently, and Joe, and Chris. I send abusive text messages to them all the time.

Interviewer: During the day?

Yes, nothing [else] to do. After homework, depending on how frustrating the day’s been, I spend about an hour to about four hours playing my guitar and drums. After that I probably chill out watching television or go on the computer and download something from Napster.

Interviewer: You said you do that to chill out. What does that mean, chill out?

Just to relax afterwards, unwind from the day.

Rick, 17, Male, London, United Kingdom

WORK AS ENTERTAINMENT

Naomi's mentor at the advertising firm she works for in Japan serves as her role model. This gentleman, who is much older than Naomi, has managed to combine his work and hobbies, which revolve around anthropology and design. His standing in the company is high, and he is allowed to pursue interesting projects that do not necessarily fit into the for-profit activities of the firm. The company gives him latitude that few others have. This is clearly what Naomi aspires to.

The kind of work that Mr. Ouchi does, does not generate profit. He does things to satisfy his intellectual curiosity. There is a fine line between what he does for his living and his hobby. They sort of merge.

Naomi, 27, Female, Tokyo, Japan

Naomi's other role models are entrepreneurs who have started their own companies and who, like her mentor, are successfully merging their hobbies or entertainment with their work. Among these is Mr. Matsumoto, a game designer, who has turned his passion into a series of successful ventures.

Frank in Sweden echoes Naomi's attitude. During his university years he has taken every opportunity to cross the globe for interesting internships or projects. His approach to work is that it has to make sense and be fun. In the process of studying, filling various internships, and traveling he has come up with a good number of business ideas, many of which he pursued because they were fun to do and had a potential, however small, for generating income. He describes how he started his own company.

I have my own company. It's registered but it exists mostly on paper. I went to a convention in Las Vegas. But it really brings in no revenue.

Nothing is going on right now. It's mostly a fun thing to have.

Frank, 25, Male, Gothenburg, Sweden

Another fun project was his own radio station.

In 1998 I had this idea to start a radio station in my closet. ... I was going to broadcast radio to the entire world from my closet. That was pretty smart. But then for various reasons I couldn't do it. That's what I planned, anyway.

Frank, 25, Male, Gothenburg, Sweden

Even Frank's latest adventure—a sojourn in Cuba—integrates elements of fun, learning, and potential business opportunities.

I read quite a lot about the country, and especially about Fidel in order to prepare myself. His political talent further got me into visiting the country while he is still leading the country, and while the embargo is intact ... It should also be added that I was attracted to Cuba by my curiosity about the insecurity implicated by a dictatorship, which forbids literature, censors mail, listens to conversations and uses spies. I also wanted to examine the possibilities to open a small bar, once the state ownership would disappear. All this in such a fantastic climate!

Frank, 25, Male, Gothenburg, Sweden

To integrate work and fun in his life, Masa in Japan is adding marketing studies in California to his computer engineering degree. The aim is to

combine his IT and marketing skills to create a restaurant chain that provides high-quality Japanese fast food, an idea he's been thinking about for a long time. This enterprise would combine much of what he values in life—good food, using his IT skills, and succeeding in business.

GAMING IS SERIOUS BUSINESS

Despite the fact that they appear to be just for fun at best and a frivolous waste of time at worst, gaming activities (and other forms of teen recreation) actually play an important role in young people's social and intellectual development. Indeed, they are important vehicles for building relationships, learning teamwork, analyzing problems, forming solutions, and understanding how media manipulates the user and how to manipulate the media in turn. Rick's mother in the United Kingdom, who is a professor of media studies, tells what she has observed in her son's play.

I was always kind of interested in the sophisticated way in which they [Rick and his friends] spoke about the media that they were using. They were quite analytical about it. I remember there was something—I think it was when the Ninja Turtles were hot over here and I remember them sort of talking about which bits had been censored from the screen version to the video version and why they'd cut out things like that.

It was very interactive. It wasn't that they sat there staring at the television and similarly, when they were playing computer games, even the games that were sort of one-person, they would all be talking and giving advice, and if there were four of them there might be two working on

the computer, two talking to each other, and so on and so forth. There was a lot of interaction.

If you are reading a book you can only read the book to yourself unless you're reading it out loud to people, but there isn't the same degree of interaction. There are a lot of social skills that are being exchanged and learned here [with electronic media].

Nadine, Rick's mother, London, United Kingdom

As with many forms of play throughout the animal kingdom, games are not simply games but an important way to practice the skills needed to survive into adulthood. Serious work is done while playing these games—relationships are forged, tested, changed, eroded, and ended. Strategies are determined and proved. The players find out how their individual choices affect the world, even if it's an artificial one.

Diablo II, for example, is a role-playing game with real-time fights. The higher level your character has, the stronger he or she is, the more skills, magic, and so on he or she possesses. The longer you play, the more you increase your chances of finding rare magic weapons, shields, and clothes, which also increase the strength of your character. Victor, a 16-year-old in Silicon Valley, explains how he has formed new relationships learning this game by converting his father's boss into a gaming partner.

I play against the computer, or on the Internet against friends. My dad said that his boss really likes to play the game Diablo, so I play him whenever I get a chance. ... His daughter, actually. They like playing that game. He's trying to teach me

how to play Diablo. It's not a game I'm really good at ... the boss will try to help me out by trying to save me if I'm dying on the Internet. ... He has his own computer, and his daughter has got it, and we'll all play. But they're usually stuck defending me, since I can't really do it myself. So now, I'm trying to get ready, because I'm going to face him again in about two weeks. This time, it's a one-on-one, and I want to last at least a half hour before I die.

Victor, 16, Male, Silicon Valley, United States

Players must learn to deal with at least two levels of relationships in games like these—the relationships they are role playing as part of the game itself and the relationships among the other players in real life. Seen this way, the skills they are learning while ostensibly “playing” are actually quite sophisticated.

Games can be classified as action games, strategic games, role-playing games, adventure games, or classic games. All require different sets of skills and attract different people. As befits his interest in strategic thinking, for example, Victor often chooses games of strategy, whereby he can display his chief strength and practice for a potential career in the Navy.

I like strategy games where you have to think about what you have and what you have to have. And you have to think about how long it's going to take you to get it, and how long you think you'll have until somebody finds out what you're doing. That's the main thing. I like anything with strategy—military, anything. When my parents give me gifts, it's strategy deals ... a game

where you build your economies, then you send out your forces to scout, to see where everybody is. You keep them there, find out what they're doing, then, you try to figure out, okay, this is where he is—you have to stay one step ahead of them, while they're trying to stay a step ahead of you.

Victor, 16, Male, Silicon Valley, United States

Skills like this will come in handy in whatever field Victor decides to spend his career. For Anton, a 18-year-old in Sweden, electronic games are also an important means of forging and reinforcing relationships, devising and trying out strategies, and simply having fun. Anton describes his passion for the multiplayer game Quake.

Multiplayer, yes. That's really common. It is the most fun thing to do, to log on to a server and play against the people that are there. Usually we play Quake a lot. You have your soldier and shoot everything that moves kind of. ... In this game you can play with up to fifty people. So that's a lot of people, and it's really a great feeling. There are different setups, everybody against everybody, or team play. In team play you get to know the ones you're playing with. Anders, who's really skillful, can really talk to them by using short keys—“we're starting here” or “I need help here”—and so on. There are also programs that you can connect to a microphone so you can talk directly to people you're playing with.

Anton, 18, Male, Stockholm, Sweden

While debate about the advantages and disadvantages of electronic games in children's development will continue to rage, there is no doubt that engaging young people in play is probably the best way for them to learn. Successful teachers know this and use play to teach kids new concepts and build their interest in whatever subject they're teaching. Mr. Jones, for example, a much revered teacher at a magnet school in San Jose, California, has started a Japanese exchange program at the school. The program attracts many kids because it integrates social activities, play, and learning.

And over the next few years I began developing certain activities that gave the program a little character—things like having a Japanese language cheering section at the homecoming game and having our banners and our chants. It was all quite silly and a lot of fun. ... And I kept adding things to the program—I added the trip to Santa Monica for the Japanese language proficiency examination. ... And then also the Japan trip came into place as well.

*Mr. Jones, High School Teacher,
Silicon Valley, United States*

As more young people learn to integrate communication, work, and play in these ways, they will bring their worldview into the workplace and the world at large. Are we ready for it?

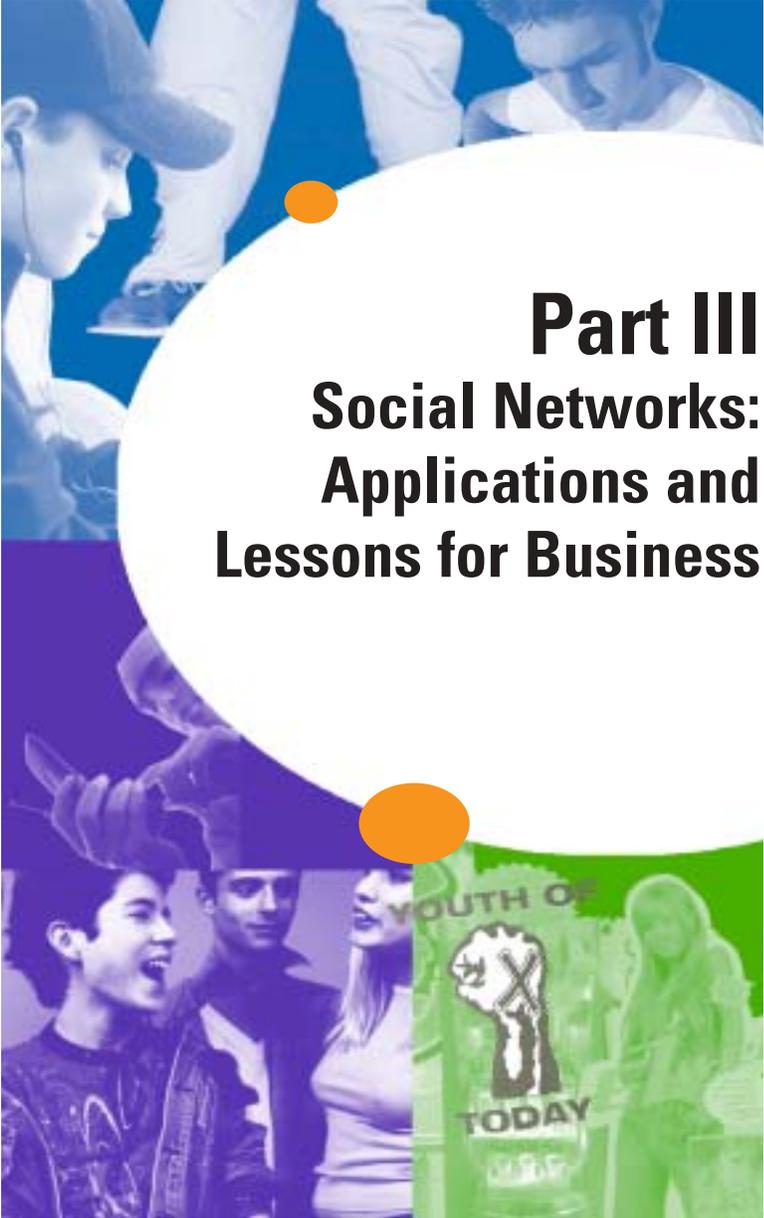
WHY IS THIS IMPORTANT?

- *Young people will bring a distinct set of expectations into the work environment.* The lines between entertainment, communication, work, and learning are no longer distinct. The younger generation just entering the labor force has different expectations about what they are getting

from work—it needs to be fun, entertaining, playful. Such preferences have implications for how work is structured, how work is performed, how work is communicated. These preferences will shape how new things are learned—tomorrow's workforce is less likely to refer to manuals, have patience for lectures or speeches—they will want more experiential learning through social interaction, prototyping and experimentation.

- *Social innovations will emerge from the integration of communication, work, and play.* Communication is already perceived as entertainment for young people. It also fills niches of time and periods of boredom, transforming otherwise fleeting moments of time into complex environments for social interaction and entertainment. With more communication systems at their disposal (for example, e-mail, ICQ, SMS, and chat rooms) young people are developing a complex set of communication and learning practices for one-to-one, one-to-many, many-to-one, and many-to-many social interactions. These interactions are equally with people they already know and with new people or those they simply share an interest with. These communication practices will be carried into the workplace and shape how work is done and communicated.
- *Shift product and service experiences from passive to interactive.* Young people expect product and service experiences to be interactive. They don't know any different. For many of them, their formative product and service expectations have been shaped by technology and entertainment gaming devices. For them, gaming is serious business. It is highly interactive serving as a platform for building relationships, learning teamwork, analyzing problems, and forming solutions. This experience and the expectations it sets will shape the purchase and consumption of

other products and services in their lives. A product can become an entertainment product by shifting its experience from passive to interactive but also by facilitating social interactions with its purchase or use. Social utility, the degree to which a product or service facilitates social interactions within a network or across networks, will become a new differentiator.

The background features a collage of images. The top half shows a young woman in a white shirt and a young man in a white shirt looking down at something. The bottom half shows a young man in a dark jacket pointing upwards, a young woman in a white top, and a green sign with a fist holding a pencil and the text 'YOUTH OF TODAY'.

Part III

Social Networks: Applications and Lessons for Business

Part III

Social Networks:

Applications and Lessons for Business

Today's youth are incorporating communications technologies that provide abundant connectivity into their lives and are using these technologies and other methods, to build and maintain wide-reaching social networks. The evolution of social networks, and especially changes in the social networks of today's youth, will force companies to change their ways and offer new opportunities for success. In Part III, we explore the how businesses can use social networks to their benefit. In "Diffusion of Ideas, Products, and Services," we use in-depth case studies of product diffusion to identify lessons for business on the role social networks play in successful product diffusion. In "Turning Consumers into Advertisers," we look at social network marketing, or viral marketing—why companies are using it, the downside of viral marketing, and forecast future developments in this arena. We also identify the new market opportunities that social networks offer to business.

Diffusion of Ideas, Products, and Services: Case Studies and Lessons

While globalization may be an accepted condition of the 21st century, its complexities are far from understood completely. And it's no wonder. Shifts toward flexible, dispersed production, the growth of new communications and information technologies, and the increased mobility of capital and labor mean that even a single local experience is the result of an intricate mingling of images, people, and products from around the world.

Take sitting at home watching a video, for instance. If you happen to live in, say, an inland rural community on the Malaysian island of Borneo, that video might have been purchased from a Chinese merchant and is a pirated copy of a tape of Hulk Hogan, a World Wrestling Federation (WWF) favorite that has been a local hero for the past 15 years. At the

same time, on the other side of the world, North American preadolescent boys are likely to be watching the latest installment of an animated Japanese TV show, translated and reinterpreted for the American audience.

In the increasingly competitive global marketplace even the freshest and most successful products have to diffuse or lose. Of course, it's impossible to predict for sure who the next transnational hero or universal children's cartoon character will be, but we can take a deeper

look at the processes driving diffusion. More than ever, companies with a global reach need to understand how new ideas, trends, and products travel in today's global economy, and more importantly, why some ideas, practices, or products are taken up, modified, and reinvented in new regions, while others remain strictly local.

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas.¹

¹ Everett M. Rogers and Karyn L. Scott. December 10, 1997. "The Diffusion of Innovations Model and Outreach from the National Network of Libraries of Medicine to Native American Communities." Draft paper prepared for the National Network of Libraries of Medicine, Pacific Northwest Region, Seattle.

But first, some definition. Diffusion is a dynamic process—products and ideas change during adoption, often reinterpreted for quite different uses than for which they were originally designed. As a result, what actually gets diffused may differ substantially from what was originally intended. In this way, diffusion is best thought of as consisting of three intertwined processes: 1) the introduction of a new idea, trend, or product; 2) its adoption; and 3) its reinvention (see Figure 17).

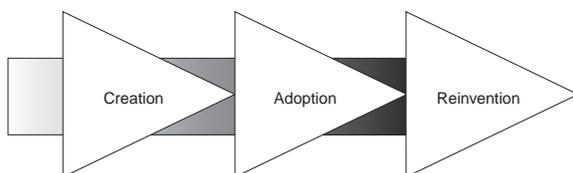
It's important to note that the process is not linear. In fact, adoption and the local reinvention of an idea or practice work together recursively. Cultural differences, disparities in economic and social environments, and technological infrastructure guarantee that people find new ways of integrating innovations into their own daily practices, in the process reinventing the original and fueling the next wave of innovation. What this means for businesses trying to introduce their innovations in the world market is that the search for “cool” is far from enough: businesses must pay attention to how cool moves, morphs, and becomes significant across different populations.

A FRAMEWORK FOR UNDERSTANDING DIFFUSION ACROSS LOCALES

To create an evaluative framework, IFTF identified the major propagation mechanisms driving the diffusion of messages, products, and services in a global context (see Table 3). Keep in mind that diffusion is not something over which a company has complete control. Ultimately, why one product catches on and spreads around the world and another languishes in obscurity is still somewhat of a mystery. But companies can take a look at the best practices of companies that have successfully diffused their products around the world. Our framework offers a way of analyzing emerging trends (in business, products, services, or ideas) to determine whether a trend that originates in one locale is likely to diffuse to and be adopted in another.

Within a particular locale or region, diffusion is shaped by both external and internal drivers. External drivers determine how the innovation arrives in a new place—that is, how it is pushed—from another region.

Figure 17
The Diffusion Continuum



Source: Institute for the Future

Table 3
Drivers for Diffusion Between and Within Locales

External (between locales)

- People
- Investment
- Media

Internal (within locales)

- Cultural traction
- Infrastructure

Source: Institute for the Future

External Drivers

External drivers push the innovation from its point of origination into new regions. External drivers include people, investment, and media.

People

Don't underestimate human channels as a conduit for diffusion. While people are not entirely free to work and live where they wish, they are more mobile than ever. For example, in 2000 international tourism increased by 8% and while the September 11 terrorist attacks did result in a slowdown in international travel, the travel industry expects to see improvement in 2002 and beyond. International migration has also been on the rise. Since the mid-1990s, the migration of asylum seekers and refugees to Organisation for Economic Co-operation and Development countries has increased due to overseas conflicts and legal and illegal employment opportunities. Other forms of mobility are increasing as well, such as the transfer of staff within multinational firms, the temporary movement of skilled workers to provide short-term services, and the exchange of students among developing and developed countries.

As people crisscross the globe, they bring ideas, products, and practices along with them. The success of Hsinchu Science Park in Taiwan, for instance, can be attributed to the movement of people. Taiwanese students who attended U.S. universities and worked in Silicon Valley have returned home armed with new entrepreneurial strategies, in this way revolutionizing Taiwan's investment and technology infrastructures. The same is true for Silicon Valley-based Indian engineers participating in the transformation of Bangalore. The flow works both ways, of course. Indian and Asian students and workers make an important contribution to U.S. universities and technology companies. The influences are becoming cultural as well. Western urbanites in Europe and the United States are beginning to

enjoy so-called Asian fusion in food and music, just another of the many new cultural products born out of the mixing and moving of populations.

Not only are people moving around more, it's easier for them to stay connected while they are away. Messages between those in adopted countries and those at home are being transmitted more quickly and easily than ever before. Diasporic populations, whether tourists or legal or illegal migrants, often become the brokers of new ideas and practices, thus playing a critical role in the diffusion process.

As people crisscross the globe,
they bring ideas, products, and
practices along with them.

With today's audiovisual and electronic communications technologies, even those who stay home are accustomed to traveling—in the realm of the imagination. For instance, savvy Asian youth can track the latest trends from Seoul and Tokyo via magazines and Web sites without ever leaving their bedrooms, rework them for a local audience, and in this way influence local consumption. Increased personal mobility and abundant connectivity are converging to enable the growth of entirely new communities of consumption, interest, and risk, such as the Straight Edge youth movement, people with common health problems, political activists, stock-investors, educators, and so on. Virtual traveling may not involve the usual routes—and may not even involve physical mobility—but it enables the kinds of human interchanges that move ideas and products into new territories.

Investment

To find paths of diffusion, follow the money. Money is what drives the flows of people, business and social practices, and new products and services. It's no surprise that the dominant cultural forces in the

world today emanate from the dominant economies. The United States is only the most obvious example, but the rise of the post-World War II Japanese economy is another case in point: Japanese business practices, animation, and youth culture have become major forces in markets around the world, driven by Japanese technology, manufacturing, and overseas investment.

Countries with large overseas investments often exert substantial influence on recipients of such investments, shaping the latter's business practices, portfolios of goods and services, and ideals and desires. This influence could be in the form of new kinds of labor relations, such as the movement of women into the workforce as in the case of *maquiladoras* along the U.S.-Mexican border, or new management strategies such as total quality control first introduced in Japanese automobile factories in the American southeast. Conversely, countries with lower rates of foreign business investment are likely to have less cultural influence abroad—despite its size, for example, it may take China another 20 years or more to achieve the kind of global cultural impact that Japan or other developed nations enjoy today simply because China's overseas investment is still relatively small.

Foreign investment and dispersed, overseas manufacturing leads to the diffusion of messages, practices, and products by means of the following:

- *People.* Venture capitalists, engineers, marketers, factory managers, and workers are just a few of the kinds of people who accompany foreign investment.
- *Business practices and corporate cultures* are often diffused in the new locale. Think of the zero defect movement, total quality circles, and American-style venture capital firms in Europe and Asia.
- *Products and services that are produced for foreign markets* often appear on the local consumer

landscape as well. For example, brand-name clothing and fashion accessories manufactured in southern China for Western markets often appear in local markets and on many young Chinese consumers.

- *Trade and investment policies* set parameters for the inflow of goods and services into a region. For example, NAFTA has opened opportunities for increased flows of commodities and, consequently, people between Mexico and the United States. Similarly, the creation of a unified European market has increased the flows of investments, goods, and people throughout the region.

Media

Media—whether print, television, online, audio, or video—is a powerful force for diffusing ideas and practices. What people read, listen to, or watch shapes their thinking and helps generate desires for products and services.

We live in a media-saturated environment—satellite television, wireless phones, radio, do-it-yourself duplication of audiovisual content, print journals, video gaming platforms, books, and the Internet provide a rich mix of sounds, sights, and texts that reach most people on the globe in one

What people read, listen to, or watch shapes their thinking and helps generate desires for products and services.

form or another. Be it Brazilian soap operas, American action films, CNN news coverage, Pokémon's Pikachu, or techno music, media deliver messages with the power to incite the imagination and create new desires. Alternative visions of home, family, work, politics, and play are only the push of a button, the click of a mouse, or the flip of a page away—and are often communicated and experi-

enced by means of new products, services, and practices. For example, contemporary urban marriages in China now include a stop at the local wedding salon for photos in a very Western white dress and tuxedo as a standard part of the celebration. Images of such modern Western weddings have been communicated through foreign films and television programs, and are now enhanced by new Chinese wedding magazines and a popular wedding-oriented Web site.

Where local programming (in all forms) comes from, who generates the content, and the levels of access to programming by the local population are important features of the market to consider in analyzing the diffusion paths of new trends.

INTERNAL DRIVERS

External drivers are pathways for diffusion from the outside, but in themselves they are not sufficient for an idea to be adopted and widely diffused in a specific region. Internal drivers are those processes that take place within a region, locale, or community that enable the adoption and reinvention of an innovation there. They include cultural traction and infrastructure.

Cultural Traction

Innovations have to generate cultural traction if they are to be taken up locally. Even if it seems like a radical break from past experience, a new idea has to create its own fit within existing local modes of being or categories of meaning. A deeper understanding of the rhythms and routines of locals' daily activities and their expectations and hopes for their homes, their workplaces, and their leisure time will help businesses evaluate how a product might fit into the local environment.

Although he could hardly have anticipated it himself, for example, Hulk Hogan has cultural traction in Borneo because he follows a long line of semi-believable, hot-headed hero figures who are a vital part of the island's entertainment. I-mode, a

A new idea has to create its own fit within existing local modes of being or categories of meaning.

mobile data service on a mobile phone platform, gained massive cultural traction in Japan because it fit directly into niches of time and space in the daily life of Japanese urbanites, particularly young people. Long commutes on public transportation proved to be opportune moments for sending messages to family and friends and catching up on the latest news, weather, sports, or information from work, the kind of information that I-mode is good at communicating.

Infrastructure

Local, regional, and national infrastructures play a key role in fostering or blocking the diffusion of innovative ideas and products. Many elements of the infrastructure are significant, each of which filters possibilities for diffusing ideas and practices from other regions.

- *Living standards or economic base of the population.* Are there sufficient numbers of people who can afford a product, service, or practice? Many may want the product, but for diffusion to take place it has to fit into the economic means of the population. Of course, the gap between economic means and desire is a rich site for innovation and reinvention—consumers simply adapt what is available and affordable to mimic an out-of-reach fashion or product to fit their own means. Many fashion and music trends, for example, originate in low-income areas where people don't have sufficient incomes to afford high-end fashion items and instead produce their own styles that quickly become part of the mainstream.
- *Legal or regulatory system.* In some regions, it may be too restrictive on the one hand or too

unregulated on the other for businesses to control the diffusion of products and intellectual property. For a long time, South Korean law restricted the promotion of Japanese cultural products, for instance, thus considerably limiting diffusion of these products. (The restrictions have been eased recently.) On the flip side, the lack of enforceable copyright and patent laws has enabled the wide diffusion of pirated film and music products in China, Vietnam, and other places around the world—costing the original producers of the products millions in lost profits.

- *Degree of urbanization.* As Everett Rogers in *Diffusion of Innovations* noted, “visibility” and “trialability” are important prerequisites for diffusion. This means that the more people see others use the product, and the easier it is for them to try it, the easier it is for them to adopt it. Thus, in more densely populated urban areas, it is easier to transmit ideas.
- *Population mobility.* The more mobile the population, the better people are able to carry ideas across boundaries (neighborhood, professional, national, and regional). China is a case in point. Its emerging markets have been largely fueled by a massive shift in population mobility over the past two decades, which has allowed much needed labor to move from underdeveloped to job-rich locations. Rural workers carry social trends, products, and values from villages to city neighborhoods and back, generating change in both places.
- *Technology.* The configuration and abundance or lack of technological infrastructure influences the diffusion of ideas. Multiple communication channels make it easier to deliver multiple messages, for one thing. Thus, high penetration rates for communication technologies—radio, television, the Internet, PCs, mobile devices—enable the diffusion process.
- *Transportation system.* Sophisticated and extensive transportation systems including roads, public transport, and other logistics networks allow for the movement of people and goods, thus aiding the diffusion process. The spread of HIV in India is a tragic example of diffusion along transportation routes. The disease first appeared along long-distance trucking routes, and has radiated to local communities from the routes.

APPLYING THE DIFFUSION FRAMEWORK: CASE STUDIES

As businesses look to develop new products and services in unfamiliar or rapidly shifting cultural environments, an understanding of the key elements of diffusion is not only helpful but also necessary. A closer look at several case studies of ideas, products, or practices that have successfully diffused from Japan—an incubator for innovations in global youth culture, animation, and gaming—yields insights into the diffusion process overall.

Diffusion relies on intricate interactions between the external push of people, investment, and media and the internal pull of cultural traction and infrastructure support. Not every case of diffusion relies on all these elements, but each has leveraged a combination of them that works.

Diffusion relies on intricate interactions between the external push of people, investment, and media and the internal pull of cultural traction and infrastructure support.

Karaoke: People and Cultural Fit Drive Diffusion

In the past 25 years, karaoke has become a truly international phenomenon and catchword. It's even become a regular part of international diplomatic entertainment—just last year U.S. Secretary of State Colin Powell donned a cowboy suit to croon a bal-

lad to Japan's female foreign minister—and it has been immortalized in recent films such as *Duets* and *Jackpot*.

As a result, the global karaoke market, including hardware, software, and accessories, has now reached upwards of \$15 billion according to online karaoke company Eatsleepmusic.com's marketing vice-president, George McTaggart. Its successful diffusion has largely been the result of Japan's rising overseas investment and global trade, which has brought with it the movement of people as well—Japanese businessmen who live, travel, and interact among Japanese diaspora communities, as well as overseas businessmen and travelers who go to Japan. Karaoke has also found cultural traction in many countries, facilitated by the growth of technologies for delivering the karaoke experience.

External

People

Investment

Media

Internal

Cultural traction

Infrastructure

Diaspora Communities Make Karaoke a Global Phenomenon

Karaoke emerged in the early 1970s from the social drinking customs of lower and middle-class, middle-aged Japanese men, who would often sing to the accompaniment of live bands in small neighborhood bars. When a band couldn't appear at one such establishment one night, management provided pre-recorded accompaniment—and karaoke was born. Often characterized as a "lowbrow" activity when it first appeared, karaoke was only slowly adopted in Japan's more exclusive nightclubs. By 1977, however, karaoke was a full-blown craze all across Japan. Throughout the 1980s, the market was boosted by the addition of several new technological and social dimensions: video karaoke (which helped ease the anxiety of being on stage) and the karaoke box (K-box), a roadside facility with private rooms. K-boxes separated karaoke from alcohol consumption and opened the market to a much wider set of consumers, especially youth and families. They also made possible the growth of daytime karaoke, which continues to be popular among Japanese housewives of all ages.

Karaoke Diffusion in Korea

In South Korea, the diffusion of karaoke followed the path of Japanese entrepreneurs, as it had elsewhere. The first karaoke machines appeared in the late 1970s in Pusan, a southern port with regular ferry-boat operations to Japan. Used by Japanese businessmen and male tourists from Asia, karaoke technology was seen as an extension of Japan's imperial history. If Koreans did not like the origins of karaoke and its technology, however, they did like the practice itself, and set about separating it from its Japanese origins. As a result, Korea is probably the only country where karaoke has been given its own name (*norae bang*), and where 95% of karaoke apparatus is domestically made.

Meanwhile, karaoke has grown far beyond its origins in Japan, now reaching all across Asia, and into Europe, South America, and North America. Around the world, the common pattern of diffusion is this: karaoke arises first among visiting Japanese businessmen, then spreads among local Japanese immigrant communities, and finally expands to include local, non-Japanese users. In this way, Japanese businessmen bring with them not only capital and business expertise, but their own cultural tastes and a set of daily practices. Karaoke has tended to diffuse most quickly to countries with relatively large Japanese diasporic populations to begin with, such as São Paulo, Brazil, and Los Angeles, California.

The diffusion of karaoke illustrates that businesspeople do more than just business—they affect local markets in unforeseen ways, by introducing and creating demand for new products and services, not as part of their jobs but by virtue of their presence. Japanese businesspeople also introduced the practice to their foreign colleagues visiting Japan. At the same time, Japanese immigrant populations who

The diffusion of karaoke illustrates that businesspeople do more than just business—they affect local markets in unforeseen ways, by introducing and creating demand for new products and services, not as part of their jobs but by virtue of their presence.

were aware of trends in Japan helped spread karaoke in their adopted homes. Even groups who are conventionally overlooked by marketers—such as migrant workers—have an important role in diffusing ideas to families back home and reshaping local innovation environments.

Cultural Fit: Everyone Likes to Sing

Karaoke has successfully taken hold in a wide range of national markets with vastly uneven technological infrastructures. Whether by means of cassette tapes, VCRs, video-compact-discs, or streaming karaoke on the Internet, nearly anyone, anywhere can participate. The karaoke market's continued success is due in no small part to the fact that many countries already have a custom of public singing of one kind or another. Karaoke offers a novel technical solution for updating those traditions, bringing them into play with new technologies, and in the end helping to create innovative, locally relevant singing and socializing practices. The lesson is that uneven technological infrastructure can be overcome if the idea behind a product or practice has strong enough cultural traction.

Future: New Technologies Guarantee Continuing Karaoke Diffusion

The karaoke market has skyrocketed around the world with the growth of recording and Internet technologies that make it easier for individuals to customize their recordings. In the United States especially, home-based karaoke systems are a growth industry with children, youth, family, and online niche markets. For instance, MTV got into the business in 2001 when it partnered with the U.S. firm Singing Machine to market both delivery and content: karaoke machines that connect to the television or come with their own built-in TV, accompanied by CDG (compact disc with graphics), a karaoke music format. A new line of mobile, interactive music players are acting as portable karaoke mini-studios, too, such as those produced by Motorola spin-off irock! which use the MP3i digital music format distributed via the Internet. In Korea and Korean communities abroad, new developments in set-top boxes that work with digital TV and digital broadband are specifically targeting the Korean market. And online karaoke subscriber services like Getmusic.com allow users to sing, record,

and distribute their own songs. Because it is able to span the technology spectrum from simple VCR set-ups in small-town bars in Vietnam to streaming karaoke with video in a Soho advertising agency, karaoke will only continue to expand in the future.

**The Sony Walkman:
Media and Cultural Traction Drive Diffusion**

Initially seen as a gimmick—the tape recorder that couldn’t record—the Sony Walkman recently celebrated its 20th anniversary as a global brand and cul-

External	tural icon. The main agents of the Walkman’s phenomenal success were there from the beginning. Externally, it was pushed by a deliberate global investment and media strategy, and somewhat less by grass-roots efforts of people. Most importantly, however, internally it created a high degree of cultural traction—just as virtually everyone likes to sing, virtually everyone likes to listen to music as well.
People	
Investment	
Media	
Internal	
Cultural traction	
Infrastructure	

The genius of the Walkman was twofold. It offered consumers a new way of listening to music, and a delivery system that looked like the future. Indeed, it was the first widespread diffusion of the sleek, compact devices users have since come to associate with technological sophistication.

Sony followed the success of its Walkman tape player with the release of the Walkman CD player in the late-1980s. These devices continued Sony’s deliberate use of its media push, its worldwide technology platform, and its innovative designs. Once again, the Walkman showed Japanese technology leadership by delivering a new music technology in a portable package. But the CD Walkman didn’t let consumers create a personal version of the music and share these collections the way they could with tapes. For these reasons, Sony knew that the CD Walkman was not the true successor to the original Walkman.

Sony therefore created another Walkman technology—Minidisc, a digital recordable technology that sounded “as good as” CD with a media that was smaller and “cooler” than audiotapes. Minidisc was designed from the start to be portable, to allow users to record their own mixes, and to allow the discs to be shared or traded. Since this technology was released only a few years after the CD Walkman, Sony chose not to push it to the global market. Instead, it focused on the Japanese market, which is more accustomed to rapid product turnover. This allowed Sony to refine the technology and product packaging. Sony did introduce the Minidisc to other markets, but with little fanfare or budget.

In the last few years, music has been revolutionized by the introduction of MPEG-3 audio technology, better known as MP3s. This technology allowed people to use their CD collections in ways that the original Walkman allowed them to use audiotapes. Starting on college campuses across the United States, students would copy their CD music collections onto their computer hard drives, then create personal play lists for studying, parties, or sharing with friends. Inevitably, a number of companies saw an opportunity to create portable MP3 players, in this way enabling users to listen to the music away from their computers.

Early MP3 players were largely designed by fringe computer manufacturers. These companies had little or no experience with battery technologies, device and interface design, or volume manufacturing, resulting in ugly, expensive, hard-to-use devices. But these devices showed a path for the consumer to, in the words of Apple Computer, “Rip. Mix. Burn.” And ultimately, “Share.” It is at this point that Sony saw the opportunity to revitalize the Walkman brand outside Japan. It began a series of ad campaigns based on a new Walkman logo and mascot, and made sure people knew that you could copy MP3s to Minidiscs.

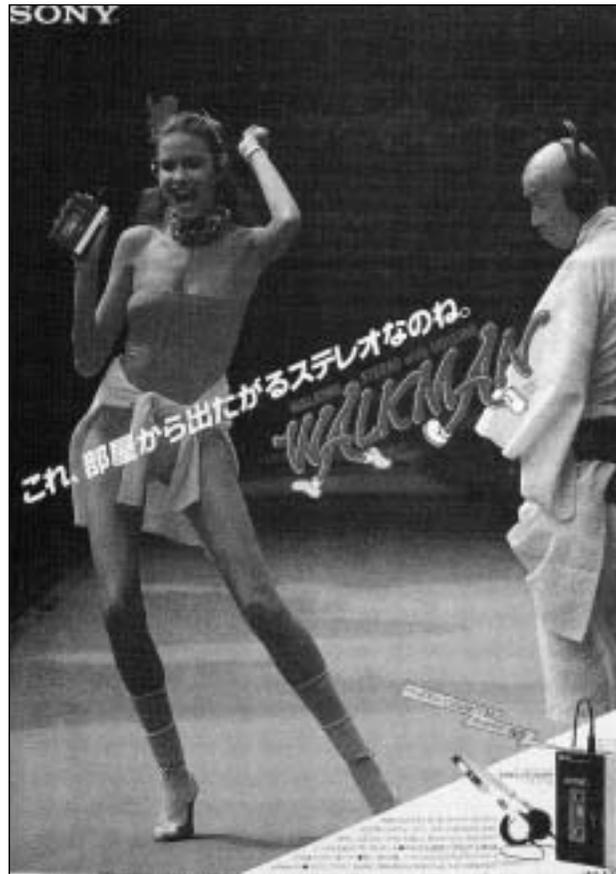
As Christmas 2001 approached, the MP3 entered the vernacular of the general consumer. It was new technology and kids loved it. Sony promoted the Minidisc Walkman in the United States and Europe as the perfect portable MP3 player. It was backed by over 20 years of the Walkman brand, the technology was stable with long battery life, a large Japanese market had driven down prices for media and devices years before, and the devices were small, elegant, and “cool.”

Corporate Strategy Aimed at Global Diffusion

Unlike many Japanese products or brands (such as Pokémon), the Sony Walkman was not a Japanese fad that diffused around the world in an ad hoc manner. It was meant to be a global product from the outset, something that built bridges between people of different cultures. Indeed, the launch poster for the Walkman in the summer of 1979 depicts a white, Western girl and an older Japanese man, indicating that the intended audience lay beyond Japanese borders (see Figure 18).

Sony promoted the Walkman through foreign

Figure 18
The Walkman: A Global Product from the Beginning



Source: Sony Corporation

opinion leaders, giving them away to members of the Berlin and New York Philharmonic orchestras, for example. Japanese tourists informally publicized the devices abroad, and U.S. tourists snapped them up in Japan prior to their American launch.

Like karaoke, the Walkman didn't need elaborate local infrastructure support. Whereas karaoke was flexibly adapted to available technologies, the Walkman was a self-contained unit that needed access to only standard batteries and cassette tapes at first, then CDs and Minidiscs later on. The Walkman fit into local economic infrastructures, since it was affordable to most middle-class consumers, as were the batteries and cassette tapes. It was also easy to operate, providing no barrier for those with less technological sophistication.

Gaining Cultural Traction by Tapping into Value and Lifestyle Changes

A product that matches latent public desires and meets changing social values is likely to experience rapid diffusion. The Walkman was one of the earliest devices to tap into the late 20th century desire for personal mobility and individually tailored technologies. The celebration of mobility fueled an explosion of products and services that would later include the laptop computer, mobile phone, and personal digital assistant (PDA). The mobility offered by the Walkman was associated with a late-modern, technological way of life. The classic Walkman consumer was an individual urban nomad who treasured multitasking, individual choice, and flexibility. The product was also identified with youth, fashion, street-style, sports (one could use it while running or working out), and, of course, popular music.

Future: Self-Expression Through Digital Appliances

Shiny, sleek, elegant, and small have come to define a new modern aesthetic, driven and coupled with other Japanese design values, such as small, lightweight, high function, and high tech. Products from the likes of Apple Computer and Handspring have

become icons of consumer design in imitation of the Japanese miniature elegance. Expect this trend to continue, most importantly in portable products, as design becomes the major differentiator of the next generation of electronic products, and people begin to define themselves more and more by their digital accessories.

What the information age has shown us is that consumers value self-expression—they want to create something that tells the world who they are. Products need to leverage that trend if they want to catch hold of the public imagination. Products need to help people be personally creative, whether this means creating an MP3 playlist of their favorite songs, putting their pet's picture on a mobile phone screen, or simply painting a PDA with nail polish to give it more color. Products or services that enable self-expression will have an advantage in a crowded marketplace. The need to be an individual and, at the same time, part of a tribe, has been a recurring characteristic of the human animal that needs to be integrated into product designs and language.

J-Pop and K-Pop: Investment Driving Diffusion Across Asia	
External	
People	
Investment	American economic dominance has led to the well-documented export of American pop culture throughout much of the world. Recently, however, Asian teenagers have turned to Japanese pop culture instead. Japanese pop culture dominates the region because its investments in media, and its successful image alliances across channels, including the music industry, print, television, the Internet, and merchandise, far surpass many other Asian countries' abilities to produce domestic cultural and entertainment products.
Media	
Internal	
Cultural traction	
Infrastructure	

Pop idols have been dominating Japan's popular culture (J-pop) since the late 1960s, when they

became a nationwide craze. Since then Japan has witnessed the creation of a whole new domain of popular culture built around youth and sponsored by the media, the entertainment industry, the advertising sector, and retail corporations specializing in the creation of profit-generating teen-oriented trends, fashion, and products.

American economic dominance has led to the well-documented export of American pop culture throughout much of the world.

By the mid-1980s, many Japanese pop singers became major celebrities in places such as China, Hong Kong, Taiwan, and South Korea. This trend coincided with rising economic affluence in these nations. The typical pattern of diffusion outside Japan was for Japanese singers to begin in Taiwan and then to move into markets such as Hong Kong, China, and Singapore using Chinese connections. Many home-language magazine articles and Internet home pages stimulate Asian fans to demand information about their favorite idols. Even in South Korea, where Japanese television programs, magazines, music recordings, animation, and other forms of popular culture have been officially banned because of Japan's history as a colonial power in the region, many young people obtain information about idols and other forms of Japanese pop culture through underground sources. As a result, in recent years, increasingly sophisticated local idol industries have sprung up across Asia, packaged according to the Japanese prototype.

***Cultural Fit:
Japanese Idols Are Familiar***

For Asian people outside Japan, Japan's pop culture has a resonance that derives from ethnic similarity and shared values, tastes, and traditions. The faces of Japan's pop stars and actors resemble their

own—that is, hair, color, and make-up are similar—and are much more familiar than Western pop stars like Britney Spears. Further, J-pop has a strong strain of idealism, innocence, and romance (for example, dreams, daring adventure, striving to achieve great things) that appeals to the optimism of recent economic progress (in contrast to American pop culture, which tends to have a heavier dose of cynicism and “attitude”). Economic development produces new social conditions: urbanization, consumerism, and changing family structures, gender roles, lifestyles, and values. Because Japan was the first Asian society to experience this kind of economic and social change, it was also the first to reflect new social realities in its popular culture. So despite its colonial history, Japan has served as a model for other Asian nations seeking to raise living standards by means of industrialization and trade.

For young people across Asia, J-pop constitutes a de facto brand that represents urban affluence, modernity, and a high level of engagement with the West. In this way, J-pop provides a point of reference for making sense of the changing social conditions accompanying economic growth and modernization. Not surprisingly, J-pop has its strongest presence in urban metropolises like Hong Kong, Singapore, Seoul, Shanghai, Taipei, and Bangkok. These cities have an increasing cadre of young people with money and a desire to participate in global trends.

***Investments: Media Alliances
Promote Diffusion***

Behind the success of Japanese diffusion of pop idols is a carefully orchestrated investment strategy that involves alliances between different media outlets and the promotion of images across channels. Today, Japan's music industry is the second largest in the world after the U.S. market, in part thanks to expansion throughout the rest of Asia. Many indigenous promoters and media organizations have collaborated with Japanese idol producers, thereby facilitating a knowledge transfer of Japanese-style

idol production and marketing to other Asian markets. In Japan, artistic creativity and innovation in one popular medium quickly expand to other media, thanks to a web of image alliances among producers of the print media, TV, movies, and merchandise. Mutually beneficial relationships among these sectors of Japan's culture industries not only work to increase the size and earnings of those industries, they also function as a powerful tool for the spread of Japan's popular culture to other Asian countries. The market infrastructure required for an image alliance to take root and function efficiently—large-scale publishing companies, bookstore chains, television networks, and shopping malls—is expanding in Asia's growing economies.

***The Future: From J-Pop to K-Pop
to a Pan-Asian Music Scene***

J-pop idol packaging—cute, stylish images and a range of promotion tools—has been introduced to other Asian entertainment industries. South Korean pop culture (K-pop), with its base in Seoul, is gaining increasing traction with youth across Asia, including Japan. In the light of the recession in Japan, the Japanese pop idol craze is believed to have peaked, and the emphasis is shifting from “cute” to “unique.” “Hipper than J-pop” and “cooler than China's Cantonese pop culture (Canto-Pop),” K-pop builds on a culture imported from outside Asia, namely American hip-hop. However, promotion and packaging are still largely in accordance with the Japanese model.

Since the mid-1990s, investors have been pouring money into South Korea's fast-moving entertainment industry. For example, over 70% of annual music sales—worth \$290 million—are local acts. Non-Korean entertainment companies are struggling to keep up. Even U.S. teen-queen Britney Spears sold only 20,000 albums in Korea last year, while the South Korean group HOT reached over 1.4 million for 2001.

In the same way “Korea Inc.” once helped Samsung and LG start selling their products abroad by subsidizing these companies at home, there is now government support for exporting pop culture. The Korean Culture and Tourism Ministry has grand plans to promote K-pop abroad, while the governing Millennium Democratic Party has even set up a “Korean Wave” committee. Like its electronics makers, Korean entertainment companies are eager exporters, more than willing to tailor their offerings to overseas markets. The efforts are paying off. Seoul is suddenly a trendy holiday destination, proclaimed by Hong Kong's Next magazine as the “hippest city in Asia.” According to tourism officials, visiting “Korea Wave” fans spent nearly \$6.7 million in the country in 2000.

The “Korea Wave” could be a passing fad. But the entertainment industry built up around pop culture is surely not fading. A growing crowd of young people across Asia live a life of abundant connectivity, connecting to fan clubs and chat sites on the Internet. In addition, the trend toward local stars making pan-Asian tours is helping to transform the Asian entertainment industry from a number of insulated country markets into one larger, increasingly integrated Asian market. As urban youth culture becomes more visible throughout Asia, we are likely to see the localization of the practice of idol packaging and cross-fertilization between regions and music genres. Entertainment companies see great business opportunities in training young Chinese or Indonesian talents according to the K-pop or J-pop model and introducing them in the home market.

The important product of diffusion in this case is not so much J-pop or K-pop themselves, but the practice of creating media alliances to package stars and to sell them throughout Asia, in this way creating pan-Asian demand and opportunities for cross-fertilization among Asian markets. Watch for the localization of the Japanese pop idol business

model. The paradigm of national and transnational image alliances will dominate pop culture industries in many Asian countries, even as content becomes increasingly local.

Pokémon: Media and Technological Infrastructure Driving Diffusion

External

People

Investment

Media

Internal

Cultural traction

Infrastructure

Launched in Japan in 1996 and introduced to the North American market two years later, Pokémon has been a global cultural phenomenon for the past six years. While sales slowed in 2001, the business has rung up a healthy \$14 bil-

lion in sales worldwide. According to the Associated Press, Bruce Loeb, a spokes-man at Pokémon U.S.A., noted that total U.S. sales of Pokémon were \$3 billion in 2000, up 67% from the year before.

Nintendo released Pokémon (or “pocket monsters” in Japanese) into the Japanese videogame market in 1996 for their Game Boy handheld videogame platform. The success of the first two games, Red and Green, led to the extension of the Pokémon characters and game to a weekly cartoon (*manga*, or Japanese comic strip) and trading cards. By 1997, Pokémon was a full-scale fad in Japan, generating \$4 billion in retail sales from 1997 through the first half of 1998. By the end of 1998, Pokémon was the top-selling electronic game in Japan, with more than 12 million video game units, 1 million CDs, and 1 billion trading cards sold in the Japanese market. Pokémon was such a cultural phenomenon that the Japanese carrier, All Nippon Airways, even painted the sides of some of its planes with Pokémon characters.

Technology Infrastructure Lays the Path for Diffusion

The key to Pokémon’s success in Japan was its release as a video game for Nintendo’s Game Boy, the most popular handheld gaming console in the

The technology platform created by Nintendo fit into the daily routines and desires of kids.

world. According to CNET, Game Boy hardware and software accounted for 23% of total worldwide revenue for the video game industry in 2000. As it turned out, the Game Boy provided the primary platform for Pokémon diffusion in North America as well. In 1995, Japanese consumers purchased 44% of the world’s Nintendo video game cartridges, but the Americans were just behind, with 42%.

The technology platform created by Nintendo fit into the daily routines and desires of kids. The portability of the Game Boy allowed players to collect and train pocket monsters during their free time. Players could compete with other players, anytime, anyplace. Kids could train on the bus to school, compete during lunch, then rush home and train or compete while watching the television show.

Media Push Aids Diffusion

Pokémon entered the U.S. market with the release of the Red and Blue Game Boy cartridges in the summer of 1998. Nintendo spent \$20 million (four times its usual budget for new products) on marketing, sending 15-minute free videos to 1 million kids and dropping nearly 1,000 stuffed Pikachus from the sky over Topeka, Kansas to signal the U.S. launch of Pokémon. Earlier Japanese hit toys like the Power Rangers and Tamagotchi virtual pets had been largely ignored by American franchisers, who were now eager to correct those mistakes by partnering with Nintendo. Within a few months, Nintendo and its American partners—4Kids Entertainment, Wizards of the Coast, Kids! WB, and Hasbro—launched a trading card game, a television show, and a series of action figures. As kids mastered the video game, demand for trading cards rocketed, and they became popular in their own right.

They began selling out all over the country, fueling a binge that spread into the adult collectibles market. In less than a year, Pokémon sales had reached \$5 billion, and Pokémon Game Boy cartridges had sold 2.5 million copies, more than any other handheld Nintendo product in such a short span.

The import of Japanese media properties in the United States has a long history, and the success of Nintendo's partnerships has led to increased investment in Japanese media by American partners. One example is the creation and promotion of the Toonami Network programming on the Kids! WB. While there has been a focused effort by such partnerships to add technology components, however, none of these imports has become the social phenomenon that defined Pokémon. Pokémon diffusion was closely tied to the cultural traction gained by its delivery platform—the Game Boy.

Future: Pokémon Diffusion Paves the Road for Japanese Animation

The Pokémon success established Japan as an incubator for North American children's entertainment. Once a product has been proven in Japan, it can be brought to the United States as a complete package tying in video games, trading cards, TV programs, movies, CDs, action figures, apparel, and accessories. 4Kids Entertainment, the exclusive distributor of the Pokémon TV program, topped *Fortune's* list of America's fastest growing companies for 1999 and 2000. Al Kahn, 4Kids' CEO, notes that after the phenomenal success of the Pokémon franchise, licensees are looking to get in early on the next Japanese products.

Watch for more Pokémon-style fads to emerge from Japan. As of 2002, Pokemania has cooled down considerably, but the cultural and technological infrastructure to facilitate another wave of Japanese manga-mania in the North American children's market remains in place. In hardware, Nintendo continues to dominate the growing handheld game player market with more than 95% of

sales, according to the NPD Group. Nintendo's Game Boy Advance was one of the most desirable toys during the 2001 Christmas season. And as for the "software"—the content that might spark another multimedia mania—there were no fewer than 40 Japanese animated cartoons broadcast in the United States in 2001, including the latest Japanese phenomena, Yu-Gi-Oh and Bey-Blade (also in video and trading card formats). North American kids have become avid and sophisticated consumers of Japanese anime; it's as much a part of the Saturday morning lineup as Bugs Bunny was to an earlier generation.

**I-Mode:
Global Success or Local Phenomenon?**

I-mode is a mobile data service provided by Japan's NTT DoCoMo that users to send and receive information via the Internet using "always on," I-mode enabled mobile phones. Released in Japan in February 1999, I-mode had 27 million subscribers in September 2001, with approximately 80% of Japanese youth using the service. I-mode experienced the most successful launch of any wireless service in history, and its users now constitute the second-largest online community in the world.

Infrastructure and Cultural Traction Lead to I-Mode's Rapid Diffusion

I-mode provides a good example of Japanese reinvention based on diffusion from the United States. Rather than developing an entirely new technology for creating sites and services for mobile phones, DoCoMo used existing Web technologies as the basis for its service. This feature, in contrast to mobile data services like the Wireless Application Protocol (WAP), made it easier for designers to build and deploy I-mode Web sites. WAP, which was a highly touted wireless protocol in Europe in

Mobile services are ideally suited for the Japanese market in which people spend large amounts of time on public transportation and outside their homes, resulting in the need for communication on the go and providing ideal niches of time for such activity.

1999, had been developed in the United States as a variant to existing Web standards. While the overall architecture of WAP mimicked the Web, the actual operations had been written to be different from, and were incompatible with, Web protocols like HTML. DoCoMo publishers, on the other hand, were able to develop their sites in compact-HTML, or c-HTML, a simple variant of the Web's popular HTML language; WAP developers were required to learn HDML, which was an entirely different language and required a different way of programming.

At first, the sale of I-mode handsets and service was focused on the Japanese business community, which was slow to adopt the service. Teens and young adults, on the other hand, picked it up almost instantly. The younger Japanese had been intense users of pagers; thus, the transition to I-mode was easy for them—they simply transferred pager codes to the I-mode and PHS (a mobile phone system whose low-costs created a mobile teen communication phenomenon). Both of these technologies had provided a taste of anywhere, anytime communication because of their ease-of-use, portability, and costs. (I-mode customers are charged per byte of data or information they access rather than by the amount of time they stay connected.)

As DoCoMo stumbled into this new demographic, it concentrated on developing services that fit into the daily life experiences of Japanese teenagers and young women. Mobile services are ideally suited for the Japanese market in which people spend

large amounts of time on public transportation and outside their homes, resulting in the need for communication on the go and providing ideal niches of time for such activity. The ease of publishing and the intentional marketing by DoCoMo supported the creation of content tailored to the tastes and desires of young I-mode users, with popular sites like Banda that allow people to download comic-strip characters as wallpaper.

Future:

Will I-Mode Become a Global Phenomenon?

DoCoMo is pushing the I-mode service in other regions of the world by means of both media and investments. Its wild success in Japan has garnered a lot of publicity for the company, which DoCoMo has been savvy in building on. The company has also invested in wireless carriers in other regions—AT&T in the United States, KPN Mobile in the Netherlands, KG Telecom in Taiwan, and Hutchison 3G in Hong Kong. These may give DoCoMo some leverage locally, but I-Mode's success in Japan, in addition to the service's fit into the daily lives of Japanese youth, is based on a business and technology infrastructure that might not exist anywhere else.

The success of I-mode is linked to the unique characteristics of the Japanese telecommunications market. The key technologies in I-mode are software for publishing and billing, allowing for the creation of third-party sites and services that DoCoMo can bill, providing a revenue stream to both DoCoMo and the third-parties. DoCoMo was able to rapidly deploy I-mode in Japan by using the publishing and billing software on top of an existing standardized wireless hardware infrastructure. This wireless infrastructure was developed in a telecom market that is largely unique to Japan, closed to outside competitors, and highly regulated internally. Additional regulations allowed DoCoMo to heavily subsidize the manufacture and sales of I-mode handsets, an action that is limited or illegal in some European companies.

As DoCoMo tries to diffuse I-mode to other regions, it must deal with two key issues: 1) the lack of a standardized wireless infrastructure that can support “always on” data services, publishing, and billing; and 2) the company’s ability to put itself in a technology-driver position (or find local partners) in more open markets.

At present, standardized wireless infrastructure is very limited in the United States and Europe. Early examples of usable infrastructure in Western Europe and the United States are GPRS networks and handsets. GPRS, or General Packet Radio Service, has existed in parts of Europe since 1999. In the United States, AT&T introduced a limited network in Seattle in July 2001. Ericsson and Nokia introduced GPRS handsets in small quantities throughout the Fall 2001, primarily in the European markets, but none has found huge success to date.

To improve its position in new, more open markets,

While the I-Mode model may not diffuse completely outside Japan, lessons of the experience are diffusing widely and are influencing the development of the next generation of mobile services in the United States and Europe.

DoCoMo is partnering with key businesses in the markets in which it would like to deploy I-mode. DoCoMo can be a strong friend to partners by offering cash to build out the required infrastructure, and bringing the experience and examples of I-mode software and handsets into the new markets. Given the financial difficulties of most telecom companies, however, their appetite for risky investments is limited.

In addition to these two obstacles, I-mode faces other challenges outside of Japan. While mobile data services might be appealing to urbanites who

spend substantial amounts of time on public transport and in other public spaces, they may not be as appealing to the good portion of Americans who live in suburban areas and spend most of their commute time in private cars. Also, U.S. consumers are conditioned to accessing information on large screens via PCs, and may face interface issues when communicating via mobile phones with tiny screens and even smaller keys. Thus, in countries with a substantial PC infrastructure legacy, switching to mobile devices will prove difficult. Finally, Americans are also used to getting free or virtually free online access; paying for packets of data may simply not be palatable for them.

While the I-Mode model may not diffuse completely outside Japan, lessons of the experience are diffusing widely and are influencing the development of the next generation of mobile services in the United States and Europe. One of the key lessons is that tools based on a well-known and widely used technology, such as HTML, work. The WAP debacle proves that this is true even with the different requirements—narrow-bandwidth, high-latency—and user experience in the mobile data marketplace. Already, competing services like BlackBerry have shown user uptake of mobile data by integrating with existing Web e-mail systems, such as Microsoft’s Exchange Server. Danger.com and other startups are said to be working hard to make their forthcoming mobile devices proper members of the Web community, in this way leveraging the investment, creativity, and labor of the past six years on the Web. As mobile devices, services, and experiences advance in the coming years, those that best leverage the existing network of developers and user experiences will see the greatest success.

Another lesson is that there is a large market for cost-effective (not necessarily low-cost), constant, and instant communication among the young, from I-mode in Japan, to short message service (SMS) in Europe, to instant messenger (IM) in many other

regions. Going forward, the technologies that further support sharing, self-publishing, and the ability to create, find, maintain, and live within a social network will come to dominate. I-mode enabled both the creation of role-playing games and special interest groups for sharing information. Community-focused games requiring only limited wireless or computing ability, such as Cybiko or POX, are creating runaway hits with youth. As wireless data technologies supporting cellphones and PDAs roll out across the world, we expect the winners will be those that most closely resemble the user experience created by I-mode.

IMPLICATIONS

The case studies presented in this chapter illustrate that diffusion is not linear. Although many companies try to stage diffusion, sometimes successfully, most often it happens through grass-roots channels and results in reinvention or reinterpretation of the original product or practice to fit local categories of meaning and social practices. What is being diffused changes in the process of diffusion. The practice of karaoke is different in Japan than in many other countries. J-pop has evolved from its origins as the packaging of Japanese idols to the packaging of local celebrities in many other Asian countries, in the process creating a pan-Asian music scene and youth culture.

To understand whether a trend, idea, product, or practice will diffuse from one locale to another and to promote diffusion of its own products, companies need to keep in mind the following.

- *Understand local domains of meaning.* How does an idea or a product fit into social practices, daily activities, and domains of life in the region? Does it have cultural traction?
- *Track people flows—they represent diffusion pathways in the market.* The movement of people is an essential factor in the diffusion of innova-

tion. Companies targeting the Asian markets should seed products with mobile market segments. Mobile populations such as business travelers, exchange students, migrant workers, and so on are the brokers of new ideas and trends between locales within Asia and between Asian and the outside world.

- *Target market segments known to “localize” innovations.* Cultural traction can be created by appealing to market segments that tend to localize foreign innovation for mass consumption. Teenage girls have played this role for a variety of products including fashion and technology in Japan. Teenage girls helped define I-mode’s value, for example, by integrating its use into their daily communication and social practices.
- *Use social networks as a communication channel.* People are living in a saturated media environment. Places like Japan and Hong Kong are at the extreme of the continuum. What this means is that attention is not easy to get and often even harder to hold. Communication strategies should use social networks as a communication channel as well as integrate them with other communication channels such as direct mail, e-mail, the Web, retail stores, and so on. Plenty of examples already exist. Look at Bolt.com, a Web community for teens worldwide, and click2asia.com, a pan-Asian Web community targeted to 15-24 year olds. Each provides a forum for interactions based on interests while creating ready-made audiences for marketing messages.
- *Define “local fit” by becoming an interpreter of trends.* Consumers in Japan rely heavily on retail stores and their employees for purchasing decisions. Others rely on magazines that interpret trends tied to their interests in activities such as fashion, technology, cooking, hobbies, and so forth. Each of these acts as an interpreter of trends defining what is cool and what’s not.

Cultural traction can be created by becoming, or partnering with, a trusted interpreter of trends.

- *Place product within social activity to leverage cultural traction.* Entry into new markets can be facilitated by fitting the product into social practices and activities. Karaoke is a great example. Products that fulfill needs for social interaction and engagement are key. They naturally appeal to more than one person and can diffuse through markets faster than products designed for individuals. That is not to say that social interactivity cannot be added to offerings. Such a strategy is important for establishing brand identity and building awareness in new markets. Pokémon diffusion is no accident. The franchise chose to introduce a product that could be used within a social activity, that is, gaming. This strategy quickly created the audience for further products such as cards, movies, clothing, and so on.

Turning Consumers into Advertisers: Social Network Marketing

On Monday morning, Katie opened her e-mail and scanned the usual collection of about 70 messages. Katie's strategy for dealing with this morass was to see who the e-mail was from, delete all the advertising and list mailings as she scanned the inbox, read messages from her boss or her immediate team members, and then turn to e-mails from friends and family.

By 10 a.m., she finally got to friends and family. The first e-mail was from an old college roommate, Sarah, who lived in Boston. Katie had always looked up to Sarah in their college days—Sarah had a great sense of style, seemed to know everyone, and often guided Katie to what was in and what was out. Katie looked forward to Sarah's e-mails, with their breezy and humorous depictions of Sarah's cast of numerous friends, family, and acquaintances. This Monday was no exception as Katie opened Sarah's e-mail, but to her surprise she found that it was addressed not just to her but to a whole list of people, many of whom Katie had never heard of before. She proceeded to read:



Katie read the e-mail several times. She wasn't sure what to make of it. This was more than advice from a friend; this smelled of an advertisement, and it was addressed not just to Katie but to this long list of people, some

of whom Katie recognized and others she had never heard of. "Who are these people?" she wondered aloud. "And what does Sarah get out of this? Did she get this great day at Revive as a freebie for sending this to all her friends? Does she get paid for it?" Annoyed and baffled, Katie deleted the message and proceeded warily to the next e-mail, this one from her cousin just back from a trip to Italy.

Welcome to the world of social network marketing, where roles, relationships, and boundaries are blurred—a friend is not just a friend but also an advertiser, a product endorser, and sometimes a salesperson—where the boundaries between private and commercial are porous, the roles of consumer and advertiser often merge, and social relationships become intertwined with commercial transactions.

Social network marketing—so-called “viral marketing,” because it spreads so fast and spontaneously—is becoming a holy grail for many companies. Why? Because of its tremendous power to get the attention of consumers and to sell products in today’s crowded marketplace, oversaturated as it is with advertising messages. After all, recommendations from a trusted friend or family member are the best way to convince potential customers to purchase a new product or service. According to Planetfeedback, 70% of consumers change their attitudes about products or services after reading opinions of others in their social networks. This dynamic is further facilitated by technology. A recent Roper Starch Worldwide study identified “e-fluentials,” a group of people who are very likely to influence the surfing habits of other users. They are Internet experts and spend more time online at more sites than average users do and are four times as likely to be asked by other users for business and technology advice.

Many companies have already witnessed the power of social networks—*The Blair Witch Project*, a low-budget movie produced by an unknown group of amateurs, attracted millions of people exclusively by word of mouth spread mostly on the Web. Today, a film’s success depends on the word of mouth buzz before its opening. The film, *A Walk to Remember*, was no exception. Prior to its opening in January 2002, the studio sent 10,000 “guides” with film clips and posters to pastors of parochial schools across the country. The packets asked pastors to take teenagers to the film on opening weekend and on

Sunday engage them in a conversation about their faith and the movie, thus increasing the audience for the film.

Hotmail users grew in number to 10 million in less than a year by network marketing—by including “Get your private, free e-mail from hotmail at www.hotmail.com” at the foot of every message, alerting every recipient of the availability of the service. Another example, is one of the most successful books of the last five years, *Dr. Atkins New Diet Revolution*—it sold more than 7 million copies with almost no advertising. Beanie Babies, Pokémon cards, and Furbies are other good examples of products that have reached millions of consumers mostly by word of mouth in networks of friends and acquaintances.

Another example is POX (see text box), an electronic game that Hasbro marketed deliberately through social networks. The company targeted a specific geographic area—Chicago—and selected a group of children who were considered “key influencers” or “alpha pups” among boys 8 to 13. Alpha pups were selected by going to video arcades, skateboarding parks, and streets and asking boys, “Who’s the coolest kid you know?” The researchers kept asking until they found boys who answered, “Me.” The coolest kids were selected as alpha pups and were invited (with their parents’ permission) to come to sessions in which the POX game was demonstrated. They left the sessions with bags of POX games they were encouraged to give out to friends. Very quickly, POX became a highly sought-after item on school playgrounds in Chicago, with children willing to trade almost anything for a game unit.

With such widely known successes, it’s no wonder companies are interested in this form of marketing. But it’s not for every company or product. Let’s take a deeper look at this phenomenon, which is spreading through the marketplace today a bit like the products it advertises.



POX is an electronic game introduced by Hasbro. POX players store a library of alien DNA in their \$25 POX Containment Unit. Using a combination of heads, bodies, and tails from different species, children try to build a powerful strain of warrior virus that will attack strains other players have stored in their containment units. The wireless game unit automatically

detects any other unit within 30 feet and attacks, with the victor claiming the loser's body parts for its own library. Such confrontations can take place even while the game is stashed in a backpack or a school locker. Thus, as more kids purchase POX, there is a greater chance for them to find opponents to play with.

WHY COMPANIES ARE TURNING TO SOCIAL NETWORK MARKETING

Companies are increasingly turning away from traditional advertising—that is, from sending mass messages into the marketplace and hoping their target audience receives them—to a newer type of marketing that involves facilitating conversations among their targets. The conversations (often about the benefits and values of a company’s product or services) are seeded with a few leaders in the target market who start the conversation by telling a few more people, who tell a few more, and so on. In this way, companies are slipping into the conversational pathways of people who can influence their peers. Instead of coming from a faceless and mistrusted corporation, the marketing message seems to emanate from the most powerful endorser possible: a friend.

Word-of-mouth advertising is not new. You might say it’s the oldest form of advertising, and likely predates written language. Even today, referrals are part of everyday conversation. Consumers themselves have consistently identified that friends and family

are among the most useful information sources for making purchasing decisions (see Table 4). Indeed, social networks play a role across the purchasing cycle, from shaping the desire for new products and services, to serving as critical information channels, to influencing purchasing decisions and patterns of use (see Figure 19).

If social network marketing has always been an option, why are companies turning more aggressively to these efforts today? Because the time is ripe for it, with the convergence of a number of drivers: message saturation, increasing competition for attention, channel fragmentation, market fragmentation, and expanding technologies.

Message Saturation

Advertising messages are everywhere—in school bathrooms, on friends’ clothing, on our own clothing, on coffee mugs, on billboards, on the Web, on the road, in the home, at work, on shopping bags, on receipts, on television and radio, on ATM screens, on movie screens, on buses and taxis, on the walls of elevators, on the grocery store floor, in newspapers, in magazines, and at public events. We are constant-

Table 4
Friends and Family Are Among the Most Useful Information Sources
(Percent of adults who chose ... as one of two most powerful)

	<i>North America</i>	<i>Northern Europe</i>
Friends and family	43	30
Sales representatives	31	54
Store displays	28	37
Newspaper or magazine ads	26	14
Newspaper or magazine articles	21	15
Internet/online sites	21	8
Catalogs	12	15
Mail advertisements	10	12
Requested information	8	10

Source: Institute for the Future, International Household Survey, 2000.

ly bombarded with advertising messages. Some estimates claim that the average U.S. consumer receives anywhere from 1,000 to 1,500 such messages (in all forms) per day. The obvious challenge for businesses in this media-saturated environment is simply to be noticed.

Competition for Attention

What makes advertising today more complicated than before is that consumers are becoming adept at tuning out communications—particularly marketing messages. For example, in 1965, a brand manager could reach 80% of women 18 to 49 with three prime-time commercials. Today, it takes 97 prime-time commercials to achieve the same result.

Attention is a valuable commodity, and consumers guard it carefully. In the context of a more sophisticated and intelligent consumer, messages (of all types) must be relevant if they are to be heard. But breaking through such strong defenses isn't easy. Relevance is often determined by the degree of trust between sender and receiver, the kind of trust that exists in social networks.

Channel Fragmentation

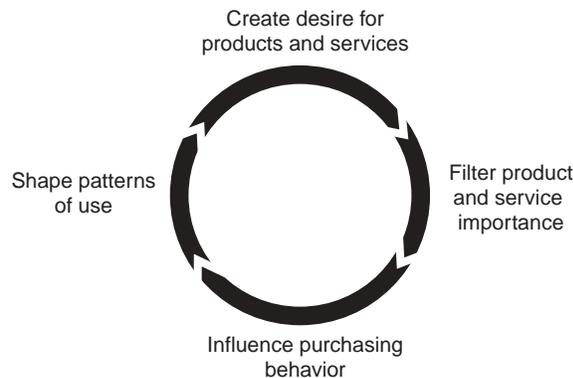
Not only is the volume of advertising messages incredibly high, but the number of communications channels is growing as well. Businesses can communicate with their customers in a variety of ways—direct mail, e-mail, telephone, television, radio, catalogs, Web sites, magazines, in-store promotions, sales representatives, and so on. As a result, consumers rely on a variety of channels for obtaining product and service information before buying something (see Figure 20).

Consumers use these communication channels in ways that fit their idiosyncratic preferences. With further penetration of mobile devices and continuing technology evolution in communications, additional channels will no doubt emerge to create even more types of messages vying for the consumer's attention.

Market Fragmentation

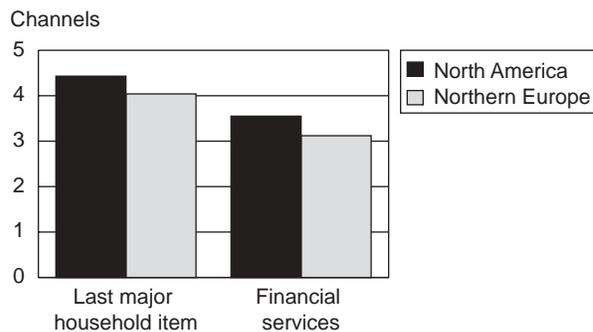
The entire consumer sector itself is also fragmenting into smaller niches. One explanation for this trend may be that different generations have different formative media experiences. For example, baby

Figure 19
Social Networks Shape the Purchasing Cycle



Source: Institute for the Future

Figure 20
Consumers Use Multiple Channels
(Mean number of channels used before making purchase of ...)



Source: Institute for the Future, International Household Survey, 2000.

boomers' formative media experience was largely shaped by television with limited programming. The formative experiences of today's youths, in contrast, are channel fragmentation and diverse programming on network television, cable TV, videos and DVDs, radio, and the Internet. As a result, media experiences are even fragmented in the home, as different age groups are drawn to different media, and different content in the same media (see Table 5). In such a climate, reaching a large consumer segment through any one channel becomes increasingly difficult.

Expanding Technologies

Word of mouth becomes a much more powerful communication channel in the context of abundant connectivity. In the information age, the Internet broadens the reach of social networks and facilitates the fast diffusion of information within and among communities.

In fact, according to a recent study of online communities by the Pew Internet and American Life Project, the Internet enables people to build new ties and strengthen existing ones by helping them find others who share their passions, lifestyles, or professional interests while at the same time keeping them much more connected with people they already know. Unlike in the past when people could only

manage a limited set of relationships, either face to face or by written correspondence—usually with family or people in their immediate geography—in the Internet age, people can include everyday acquaintances in their social network with the click of a mouse. Social networks are no longer limited to strong ties but now can include many more layers of relationships, including weaker ties that can be important in a variety of ways for everyday life.

Social network marketing is much more powerful in the world of abundant connectivity. Given these drivers, this type of marketing is becoming necessary to capture consumers' attention. Technology not only makes word of mouth faster, but there are also few or no switching costs in electronic media. In digital formats like e-mail, messages can simply be forwarded to an entire e-mail or buddy list. Technology, then, is essentially acting as an amplifier—amplifying basic social processes that existed before the Internet. Only now, networks are broader, communication is faster, and relationships are (potentially) stronger.

ISSUES WITH SOCIAL NETWORK MARKETING

While there are many advantages to social network marketing, among them the ability to break through message overload, the potential for rapid diffusion of a product or service message, and the power to reach a younger population, the practice also raises a number of societal and business issues. These include the possibility of conflict of interest, the potential for backlash, and the fact that such marketing efforts don't work for all products or locales, and they tend to be short-lived and can have limited reach.

Conflicts of Interest

As a society, we are growing accustomed to conflicts of interest inherent in many professional positions. Lately, there has been much publicity around the propriety and legality of stock analysts' work in large brokerage companies, for example. The ana-

Table 5
Fragmented Media Experiences in the Home
(Top-rated shows among teenagers 12 to 17 and all viewers, March 2001)

Teenagers	All Viewers
1. Malcolm in the Middle	1. Survivor
2. The Simpsons	2. E.R.
3. Temptation Island	3. Millionaire (Tuesday)
4. Survivor	4. Millionaire (Wednesday)
5. Grounded for Life	5. Friends

Source: Nielsen Media Research, *The New York Times*, March 13, 2001.

lysts are supposed to provide their clients with an impartial analysis of companies in the sectors they cover; at the same time, they are working for companies underwriting the stock offerings they are supposed to analyze. In fact, the analysts are often rewarded for promoting such stocks. Are they really impartial advisors or simply promoters?

Social network marketing carries some of the same conflicts into social relations. Is Katie's friend Sarah giving her a great recommendation about Revive because she really likes the product and wants her friend to experience its benefits or is she only doing so because it's part of the exchange for Sarah's receiving free treatments and products? Will we have to start assessing our friends' and relatives' conflicts of interest when getting their recommendations? Will we have to start screening our friends and family for endorsements the way we screen our e-mail?

The question becomes even more important when applied to children. Is it appropriate to use this technique with children, who are particularly susceptible to peer pressure? According to *The New York Times*, the parents of Hasbro's alpha pups had conflicting feelings about their children's participation in the program. For lower-income parents, the prospect of their children earning some extra money was particularly attractive. Still, many parents weren't sure it was a good idea for their children to spread the product because the content was too violent—after all, the aim of the game is to destroy the other person's electronic creature.

With the POX game, manufacturers at least required parents' permission in order for children to participate as alpha pups. In other cases, children may become involved in social network marketing without knowing it, which raises ethical issues about consent and protection of children's privacy.

While exchanging product information and giving recommendations to friends is a natural part of many everyday conversations, social network mar-

keting can be somewhat contrived. Such efforts often involve targeting certain groups, recruiting them into the ranks of product promoters, and offering them hidden payments (e.g., in-kind instead of explicit payments in exchange for spreading the word). These situations can bring numerous conflicts of interest into the personal sphere, truly blurring the line between business and private realms, friends and promoters.

How long can a friend be considered a source of unbiased advice before one realizes that he or she is simply another front for advertisers? The inevitable result is that the friend's recommendations are going to be filtered out the same way as thousands of other advertising messages are. Will Katie simply delete Sarah's e-mails from now on, the way she does with other promotions? More important, will Katie ever really trust Sarah again? It is easy to imagine that friends who turn into advertisers follow the fate of other advertisers—they will be filtered out, ignored, or worse, from both the personal and the business standpoint, ostracized by the very social network they are trying to influence.

Potential for Backlash

As companies develop more and more sophisticated techniques for reaching consumers—moving from traditional mass advertising to social network marketing—consumers are growing increasingly adept at deconstructing advertising messages, wherever they originate. In our ethnographic research with young people in four regions—Japan, Nordic Europe, Silicon Valley, and the United Kingdom—we were surprised to find the wide diffusion of the “no-logo” ethic. This ethic was crystallized and articulated in a book by Naomi Klein, *No Logo: Taking Aim at the Brand Bullies*, that deconstructs the process of corporate marketing and the packaging of different products and decries deliberate efforts by companies to increase senseless consumption. The book found fertile ground in the growing

anti-corporate and anti-globalization movements around the world and in fact morphed into a movement in its own right.

Young people in our research have become very adept at deconstructing advertising messages to figure out who is behind them, who really benefits from selling the product, what its real impact on young people is, and what values the messages promote. In fact, we've found that deconstructing advertising messages was sometimes the subject of extensive conversations with parents, who regularly mentor their children on understanding what is behind the message.

Such behavior shows that there is a great potential for backlash to advertising, such as social network advertising, that can be interpreted as "deceitful" or creating personal conflicts of interest on the part of the younger generation of consumers. People seen as promoting certain products or services may indeed become ostracized in some social networks.

Social Network Marketing Does Not Work for All Products

While social network marketing may be extremely powerful in grabbing consumers' attention and increasing demand for some products, it clearly does not work for all products. In order to succeed with this approach, the product, service, or trend must have a high degree of "virality"; that is, it must be able to be spread easily throughout the population. The following characteristics increase the virality of a product or a service.

- *Visibility.* Products or services must be easily observable by members of the social network in order to get them interested. Fashion items and consumer electronics products, particularly portable ones such as cell phones, PDAs, or Game Boys, may be easily observed in public spaces, on playgrounds, or in offices. These items are easily displayed; their functionality and appearance can be easily observed by members of the social net-

work. Thus, information about the product or service can be transmitted throughout the social network simply by observation.

- *Talk-ability.* Conversation, whether oral or by electronic media or print, is crucial to transmitting information and ideas. In order for a product, service, or idea to be highly transmittable, it has to be an important part of such conversations. It has to be something that is important in many people's lives, something they are passionate about,

Social network marketing is best suited for geographic markets or locales where there is a good infrastructure for diffusion.

and something they talk about with their peers or others in their social networks. Most teenagers, for example, are passionate about music—it is not only a subject of conversation but also a great differentiator and social organizer in many teen networks. What music you like, what band you listen to, and what concerts you go to connote much about who you are, whether you are "cool," and whether others want to hang out with you. Music products, including various technologies for accessing and listening to music, are perfect candidates for social network marketing.

- *Functionality in a network setting.* Some products can only be used in a network setting—that is, they require a group of people to have a service or a product in order for it to be useful to any particular member of the group. Or else they derive particular value from greater network effects—that is, the larger the network of people using the product or service, the greater the benefits that accrue to each member of the network. Hasbro's POX, for example, requires the participation of many children, since it can be played with anyone in

physical proximity of the device. In this case, children have an incentive to spread the word about the game and encourage their friends to buy it so they can play together.

In some cases, certain devices or services not only work well in a network setting but also become imbued with special meaning and are essential for belonging to the group. Our ethnographic research in Sweden, for example, discovered that it is simply not socially acceptable to not have a cell phone, as not having a cell phone connotes nonparticipation in the society and, in fact, rejection of the social norm (that is, to be accessible any time in any place).

Social Network Marketing Works Unevenly Across Locales

Social network marketing is best suited for geographic markets or locales where there is a good infrastructure for diffusion. Such an infrastructure includes several elements:

- *Social mobility.* In order for ideas to diffuse in a population, there has to be mobility of people among groups, organizations, and physical places. Annalee Saxenian, professor of regional economics at the University of California, Berkeley, has compared the economies of Silicon Valley and Route 128 around Boston. She notes that innovations spread faster and more widely in Silicon Valley because of the high degree of mobility of workers among companies, universities, venture capital firms, offices, the public and private sectors, and so on. By frequently moving from place to place, Silicon Valley workers spread ideas and innovations among different organizations much more quickly. The mobility and openness of social networks in the region result in high levels of innovation and quick diffusion of best practices. The same must be true for social network markets.
- *Communications infrastructure.* Geographic regions that have good physical infrastructure, including extensive roads and sophisticated transportation, telecommunications, and media networks, are able to provide the means to facilitate the mobility of people and ideas. Large metropolitan areas (like Chicago) are better suited for social network marketing because these areas usually provide better and more concentrated physical infrastructure for transmitting information and ideas. Although today a large degree of diffusion in networks takes place virtually in electronic chat rooms and various other electronic forums, densely populated metropolitan areas provide the setting for observing the newest trends and products and transmitting these to larger groups in the immediate locale.
- *Homogeneity.* Diffusion is easier to achieve in homogeneous rather than highly heterogeneous populations. Diffusion takes place more rapidly if members of a group have similar values, share similar levels of income, live in similar circumstances, and share similar interests. Nordic Europe, for example, is ideally suited for social network marketing. The region has an excellent communications infrastructure, as evidenced by high penetration of PCs and wireless phones (see Figure 21 on page 150). The market is fairly homogeneous, with most people sharing the same social and economic contexts—similar income levels, similar work experiences, similar levels of education, and so on. There is also a high mobility of people between different parts of Nordic Europe and between Nordic Europe and the rest of the world, giving Nordic Europeans exposure to ideas and trends from the outside and allowing them to bring these into their own countries. Not surprisingly, in Nordic Europe ideas and new products and services, once adopted, diffuse rapidly and reach wider portions of the population than anywhere else in the world.

Social Network Marketing Efforts Tend to Be Fast and Short-Lived

Social network marketing campaigns, when successful, tend to be faddish. In many cases, companies and consumers are locked in a game of coevolution, whereby the fringes of the network generate the next cool thing and companies quickly package and commercialize it. But opinion leaders in networks, the innovators, quickly move on to the next trend, taking the network with them. Social networks can move quickly to a superior alternative that is offered or brought to their attention by an opinion leader. As a result, companies can find themselves always working a step or two behind the fleeting needs of such networks.

Limited Reach

Many social networks tend to be local or issue specific—alumnae networks from a school, followers of a certain music group or genre of music, or religious communities. In order to reach a wider audience, these “small world” networks must have “long” connections, or weak ties, to other groups. In

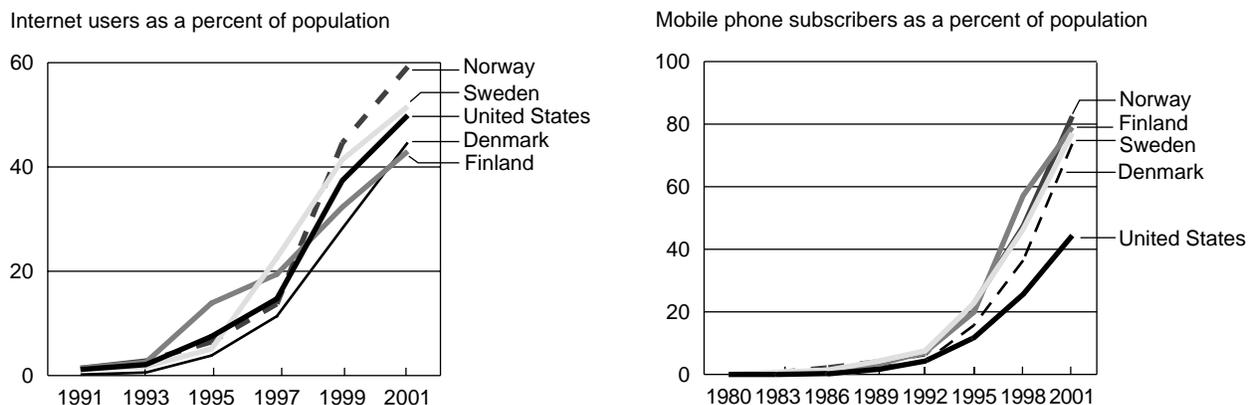
many cases, such long connections may not exist. Thus, social network marketing may in fact limit rather than extend the scope of the audience the company can reach.

FORECAST

Advances in technology will amplify the role of social networks in daily life and also make it easier for companies to reach potential customers through social networks. Given this type of symbiosis, social network marketing will become increasingly more attractive in the world of abundant connectivity. Several key trends are important to watch.

- *Technology will amplify the role of social networks in people's lives.* Information and communication technology will broaden the reach of social networks, taking them out of limited geographic and interest spheres and connecting people to new spheres of influence beyond their traditional communities.
- *More experimentation will lead to growing capabilities.* Companies will experiment more with

Figure 21
Nordic Europe Has the Infrastructure for Social Network Marketing



Source: Institute for the Future; Organisation for Economic Co-operation and Development, Telecommunications Database, 1999, ITU, 2002.

different techniques for social network marketing. Expect to see social network channels integrated with other communication channel strategies for effective customer communications. Over time, such experiments will improve the analytics and technological capabilities of this type of marketing.

- *Tagging will measure and facilitate network effects.* Tagging forges the link between information and the physical world. It binds data to time, place, and objects. Expect tags to measure and facilitate the diffusion of products and services across social networks. Tagging innovations (and the data they capture) will drive improvements in the analytics of social network marketing.
- *Wireless infrastructure is becoming the social infrastructure.* Advancements in wireless technology and their adoption and diffusion will facilitate greater “social connectivity” and result in new social practices. Expect to see changes in the way people interact socially. Mobile phones, for example, are already essential tools for participating in everyday life in places like Helsinki, Stockholm, and Tokyo, creating new social practices. For example, scheduled social interactions are increasingly rare among young people in these regions, and there is a growing expectation and preference for just-in-time social interactions. Short-text messaging, or SMS, is already being used for “social surveillance” activities, such as tracking friends’ whereabouts in the urban landscape. As a result, many young people are just an SMS message away from reaching their social networks. Companies will be poised to leverage this social connectivity the wireless infrastructure and other messaging systems such as instant messenger and ICQ are creating.

IMPLICATIONS FOR BUSINESSES

Social networks are communication channels and markets all in one. To date, however, most social network marketing campaigns have leveraged only the inherent word-of-mouth capabilities of social markets, that is, their characteristics as a communication channel. Few companies have thought deeply about the needs and desires of the social networks themselves, that is, looked at social networks as markets in their own right.

Opportunities in Supporting Critical Needs of Networks

Social networks have needs. For companies to find new market opportunities in social network, they must understand these needs and then deliver products and services to satisfy them. Social networks have four areas of critical need.

- *Identity and purpose.* Social networks need an identity or a purpose to bring together their members. These can be interests, shared experiences, ideology, values, and so on.
- *Infrastructure.* Social networks need an infrastructure and resources to enable and sustain the ongoing interactions and activities within them.
- *Activities and rituals.* Social networks need activities and rituals to sustain social connectivity (for example, annual meetings, Friday night outings, and parties.)
- *Exchanges.* Resources, either tangible, such as money, or intangible, such as social support, must flow throughout the network in order to lubricate interaction.

Rather than simply using networks as a communication channel to spread the word, companies can supply the products and services that meet a key network needs. For example, Napster created an important infrastructure for music communities. Music communities existed well before Napster and even

before the Internet itself. What Napster did was provide these music networks with a peer-to-peer music distribution (i.e., after an initial search for material, clients connect to each other and exchange music files directly from each other's hard drives) and communication system. Essentially, Napster provided the network with an infrastructure. Once in place, people with similar interest, for example, hardcore music, Christian rock, or fans of NSYNC, found others with similar interests and began interacting and exchanging files. Over a short period, roles emerged in these music networks as they solidified within the Napster community—people gained a reputation and became the genre's historian or trend spotter, for example. Napster ignited these communities and provided real infrastructure facilitating exchanges and communication—illustrating the power of technology and the power of peer to peer.

New Markets for Businesses

Fulfilling or supporting the needs of social networks is a growing opportunity for companies. Companies need to increasingly analyze what role they can play in supporting these networks—providing the necessary infrastructure and resources, supporting desire for building a group identity, or enabling exchanges and physical and online rituals and activities necessary for the community to exist. Instead of looking at social networks as information channels, they increasingly need to view them as markets in their own right with a set of needs and desires they can satisfy with the right products or services.



Social Networks in the Future: Key Findings and Implications

Our research with young people in different regions and across age categories indicates that abundant connectivity is changing how these young people form and use social networks. Not only are we seeing new patterns of use but also significant shifts in the architecture and key dimensions of such networks. Here we present a list of the significant shifts businesses should expect to see in the next ten years.

- *Wide network reach redefines traditional marketing categories.* Young people's networks cross traditional boundaries of family, ethnicity, geography, place, interests, and so on to incorporate a much wider set of relationships, both meaningful and practical. As the number of dimensions along which networks are formed increases, and these dimensions are superimposed on each other in idiosyncratic ways, the complexity of the networks is compounded. Businesses can no longer rely on the traditional demographic and psychographic categories derived from relatively large, stable, and homogenous groupings to successfully track their customers in this world of increasingly complex networks.
- *Wide reach increases speed of diffusion and innovation.* People whose networks cross multiple boundaries serve as key agents for diffusion, transmitting ideas and practices from one group or world to another. Bringing different worlds into contact also increases the chances for innovation. With more people crossing boundaries, expect the speed of diffusion and the turnover of products, practices, and ideas to speed up.
- *Social network portfolio is a key asset.* For young people, portfolios of just-in-time relationships that can be activated and deactivated as needed are important assets, making it possible for them to accomplish many tasks efficiently without prior expertise. The digital divide, in fact, may be less about access to technology than access to just-in-time relationships. In the new world, the one with the best network portfolio wins.

- *Network management is expanding.* Wide reaching networks require careful management, which takes up a considerable amount of time, energy, and money. People must learn to juggle multiple sets of relationships, each one dictating unique and idiosyncratic media choices and communication protocols. Businesses must learn to tap into these choices to reach their customers in a given context and help them manage their networks.
- *A world of multiple roles and identities.* Given the wide reach and boundary crossing of many social networks these days, many young people play multiple roles and negotiate multiple identities, each tied to a particular network or context. In this way, young people become quite skilled at multicontexting—switching roles and identities from context to context.
- *Place and face-to-face are still important.* While young people are establishing portfolios of relationships across traditional boundaries, they still live much of their day-to-day lives in real, physical places among face-to-face interactions with family, neighbors, peers, teachers, and so forth. In fact, most of their online interactions reinforce and support these “real life” interactions rather than replace them.

These findings have significant implications for many aspects of companies’ operations, including innovation and R&D activities, product design, marketing and communications, and human resources.

INNOVATION AND R&D

Companies can increase their potential for innovation by bringing together people with knowledge and expertise from different worlds. A fertile environment for innovation requires a variety of skills, knowledge, experiences, and outlooks. It is the collision of these that often ignites the sparks of innovation. Striving for optimal diversity requires reaching out to sources of innova-

tion beyond the company by creating outposts in different regions and organizations, and by bringing outsiders into the company by structuring affiliate relationships, fellowships, and joint research projects with strategic partners and select individuals.

The key to innovation is creating dense networks of personal relationships that transcend the boundaries of individual departments, companies, universities, venture capital firms, and other institutions. Within such networks, ideas move freely and are quickly taken up, reinvented, and sent back into the world. Personal face-to-face interactions are key to the success of innovation networks.

Collaborative technologies should be viewed as tools for supporting the dense interpersonal networks necessary for innovation, not as substitutes for these networks. Virtual tools play an important role in allowing individuals to extend their network reach and create portfolios of potential relationships, which can be activated as needed. They do not replace the need for the face-to-face interactions essential to building trust and communicating complex information.

TECHNOLOGY PRODUCT DESIGN

Many technologies on the market today are conceived of and sold to consumers as productivity tools for the office—something to help an individual accomplish work tasks more efficiently. These products then migrate from work to the home, where they are reinvented for personal use.

Reinventing products in this way often requires numerous workarounds. Home networks are a good example—heavily engineered office networks place a substantial burden on non-techies to administer and maintain them in the home, since there are no systems administrators to count on. What’s more, people’s personal and home needs are different from those in the office—they rarely need to share text files, for example, but instead want to exchange music, pictures, or films. Instead of bringing scaled

down versions of the business networks into their homes, users are creating less formal, ad-hoc networks by integrating only the features of devices and media they need most (via memory sticks, infrared, zip drives, and so on) to connect and transfer different types of data as needed.

In fact, in the course of our research, we found that young people do not view technologies as productivity or work tools at all. For them, technologies are tools for social connectivity—the means for connecting with, managing, and monitoring others in their social networks. They are also used for entertainment—something to do for fun or simply to kill time.

Social networks thrive on connectivity and the resulting opportunity for spontaneous interaction, on the ability to establish trust and self-organize around issues, and on the capacity to maintain latent relationships that may only be activated in response to a specific and unpredictable need. Most technology companies, however, continue to focus on building industrial strength infrastructures to support more formal organizations: e-mail, calendaring, enterprise portals, video and audio conferencing, multimedia communications, and so on. We believe that the real opportunities are in lighter-weight tools that support ad hoc teams and spontaneous collaboration within social networks that often cross formal boundaries: instant messaging, phone-, pager-, or PDA-based short messaging, personal Web cameras, peer-to-peer file and screen sharing, and so on. These technologies typically require little infrastructure, completely blur the line between personal and business use, and ignore organizational boundaries. These are the technologies much of the younger generation is embracing.

Rather than designing for office productivity, then, companies should design their products with social networks in mind. If they did that, what would digital cameras look like and how would they work? What would laptops look like? Would we

have laptops at all? Some hints may be found in Hasbro's game POX. POX, a relatively primitive wireless electronic toy, is wildly popular among kids. POX is a truly social toy since kids need to be around others who have POX in order to play the game. Thus, POX facilitates social connectivity and also entertains its owners. Social utility will become an important differentiator. Repeat after me, product designers, "Technology is about connectivity and entertainment, not about productivity!"

MARKETING AND COMMUNICATION

In this report, we emphasize that traditional marketing and segmentation categories no longer work well in the world of abundant connectivity and wide-reaching personal networks. People are crossing traditional boundaries, redefining dimensions, making idiosyncratic choices, and forging personal meanings for their networks.

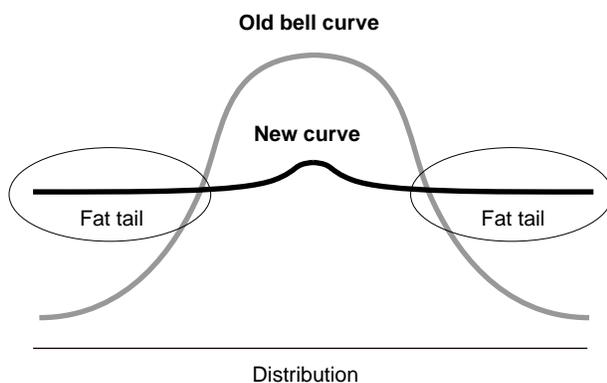
Most segmentation methodologies seek to identify fairly large, and fairly homogeneous groups that share preferences and desires. These groups are increasingly hard to find in the world of abundant connectivity. The reason is that in a noninteractive world of independent variables and static structures, like that on which traditional marketing techniques are based, where by definition categories do not collide, overlap, and compound, the statistics of normal distributions and normative behavior work well. The bulk of the phenomena scientists and marketers study—whether consumers or behavioral patterns—live in the fat bulge of the bell curve. The tails on the bell curve of these distributions are quite small, meaning that the variance is relatively small as well.

However, in a highly interactive world of people who thrive on the large degree of personal freedom and global associations provided by their social networks, we would expect to see power law (1/N) distributions instead. These distributions are characterized by the fat tails caused by large numbers of small things. For example, the distribution of city

size is not bell shaped but flatter and more distributed: that is, it has fat tails—most cities are not large metropolises but small towns and villages. Consumer markets are fragmenting and their distribution will increasingly exhibit these “fat tails” of multiple niches (see Figure 22).

Thus, businesses need to find new methodologies that can track individuals rather than large homogeneous groups, allowing companies to respond to individual needs in a given context. Because people play multiple roles, participate in multiple networks, and frequently switch contexts and identities, companies need to increasingly target their messages and offerings to individuals in their current contexts rather than to groups in general. In other words, companies need to move from group marketing to more personalized and situational marketing.

Figure 22
Changing Consumer Markets—From Bell Curves to Fat Tails



Source: Jim Herriot, Vice President, BiosGroup

HUMAN RESOURCES

An individual’s social network is a key asset—it opens doors to many sources of information and knowledge, emotional support, entertainment, and work opportunities. Young people are able to put together wide-reaching networks with many narrow, highly specialized, and sometimes weak links that give them just-in-time access to vast ranges of resources around the world. The network is not only a means of gaining knowledge and support, it often serves as insurance—one can always turn to the network if a job doesn’t pan out. Technologies support social network building, since they allow people to maintain weak connections even through periods of low or no engagement. Everyone a person crosses paths with through various life transitions is potentially a part of one’s social network, and the relationship can be activated when the need arises.

Not surprisingly, in this context, people’s loyalty is less to their formal employers and more to their own networks. Employers come and go, but the network stays with them.

Instead of expecting unquestioning loyalty to the company, then, companies should think of their relationships with their employees as temporary partnerships. To make it worth the workers’ while, companies should provide young people opportunities to build their portfolios of skills and experiences by giving them interesting assignments and moving them around. Since young people often look at jobs as opportunities to build up their personal portfolios, in return, they are often willing to work for no or little pay or take assignments that range beyond the job description just for the sake of experience.

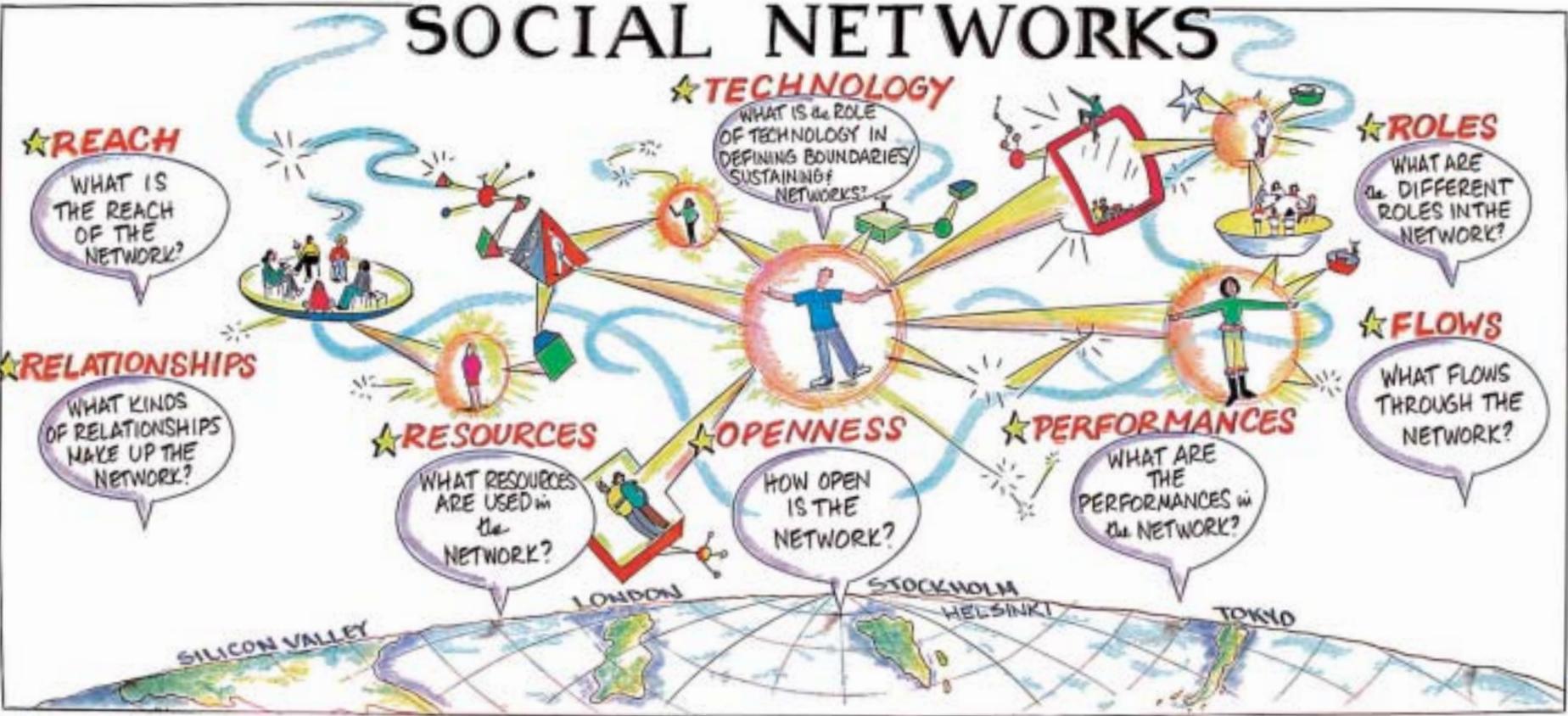
As young people change the way work is done, generational conflicts are likely to arise. Today, three generations of people work together in the typical office. In the next five to ten years, that will increase to five generations. In response, companies will increasingly need to build practices for bridging

generational differences in attention management and multicontexting.

Younger generations that are growing up in the world of abundant connectivity are skilled at shifting roles, identities, and tasks. In fact, in contrast to older workers, they may often have trouble functioning in environments requiring prolonged concentration on one task. They may also have less content-specific and deep expertise in any one area, being used to easily finding the necessary knowledge among others in their social networks, both in the physical world and online. Remember that people outsource a lot of information and knowledge in social networks—the important thing is to know who to turn to when the need arises rather than to have the knowledge yourself. This may result in clashes when working on multigenerational teams or when comparing and evaluating the competencies of different workers.

Finally, social networks play an important role in the innovation processes at companies and in their workers' ability to perform their tasks well. Yet companies don't have processes for evaluating the effectiveness of their employees' social networks. They will increasingly need to acknowledge that social networks are just as important in their workers' portfolios of skills as their content expertise, their communication skills, and their management abilities, and develop metrics for evaluating and rewarding them.

Appendix I
Institute for the Future's
Framework for Analyzing Social Networks



Appendix II

Global Youth Networks: Research Process and Instruments

We conducted a series of interviews with key informants (KIs) from Silicon Valley, Stockholm, Helsinki, Tokyo, and London. They ranged in age from 13 to 27 years old.

The interviews consisted of an initial screen, virtual interviews, an initial interview, and an exit interview. In addition to each KI, up to five members of the KI's network were interviewed. (For a description of each network cluster, see Appendix II: Research Participants.) Each interview was structured with the objective of mapping the person's network and eliciting information about relationships and activities, such as where they took place and the technologies that supported them. Each KI was also observed as he or she went about daily activities. In this Appendix, we describe the research process and instruments designed in collaboration with Professors Chuck Darrah and Jan English-Lueck from the Department of Anthropology at San Jose State University and the Silicon Valley Cultures Project.

Initial Screen

The criteria for participating are (1) being willing to participate, (2) fitting the required demographic profile, and (3) maximizing the sample diversity on the dimensions of ethnicity, socio-economic status, gender, and so on.

Virtual Interview

The virtual interview is the interview through which preparatory fieldwork can be done with the key informants before the on-site visits. Ideally, fieldworkers will know the key informant's network prior to arrival, although we expect variation here.

The interview is more a set of probes to engage the informant and provide data about their lives. The

interview focuses on eliciting basic relationship, activities, places, technology, and rhythms (RAPTR) elements (e.g., names of people, names of technological devices) and a sentence description of each (e.g., "John Smith, who is my best friend," or a specific model of personal digital assistant).

1. What are the activities you perform daily and weekly? What are the differences between weekdays and weekends? (Activity name + brief description).
2. Who are the people (by name) with whom you interact or communicate, even if infrequently? What is each relationship? (Personal name + brief description of identity or relationship to KI). Note: These should include family members, friends, classmates, coworkers, and so on. Some of these people they may place in "my network," while simultaneously excluding others (parents, grandparents). At this stage, we are focused on the relationships and not on the models of the networks.
3. What technological devices do you use in interacting or communicating with people, either through ownership, borrowing, common usage in the household, work, school, rental, public access, and so on? What do you carry with you and what do you use that remain in the different places you go? (Name of device, model, and components).
4. Where are the places you go during the course of a day and a week? What are the physical places and the virtual places? (Names of places + brief description).
5. Who among the people you mentioned might be willing and available to talk with me as part of this project?

Virtual Interview: Interim Summary

1. What domains (RAPTR) remain to be filled in during the initial interview?
2. What details (e.g., functionality of a device) need to be added during the initial interview?
3. What are some potential opportunities for exploring the network? What are some of the nodes that look promising?
4. Make the first attempt to graphically draft the KI's network based on the virtual interview. The result is preliminary and provisional, and it will be elaborated upon during the initial interview.

Initial Interview

1. Elicit data about the domains that were missing during the virtual interview.
2. Elicit the necessary details about RAPTR that were missing from the virtual interview.
3. Edit and expand the graphical map of the person's relationships to people and virtual sites.
4. Use RAPTR to probe each node and connection on the KI's network map.
 - 4.1 Who or what is the node?
Probe: What is their/its name?
Probe: How did the node become part of your network?
Probe: Where is the node located/where do they live?
 - 4.2.1. What is your relationship with _____ (the node)?
Probe: How do you describe your relationship with the node?
Probe: Can you describe your relationship with the node as a strong one or a weak one? If so, why?
 - 4.3. What activities do you do with _____ (the node)?

Probe: How often do you do those activities?

4.4. What information, things, or services do you provide to _____ (the node)?

4.5. What information, things, or services do you receive from _____ (the node)?

4.6. What are the places where you interact or communicate with the node?

Probe: How do you get to those places?

4.7. What are the technological devices you use to connect with _____ (the node)?

Probe: How do you have access to the devices?

Probe: Who owns or controls the devices?

5. Further assess nodes by reference to the initial network map and decide on several to interview.
6. Discuss logistics of the observation. It should occur on two days selected to represent different patterns of daily activity, most likely a weekday and weekend. At least part of one day must permit observation in the household.

Initial Interview: Interim Summary

1. Who or what are the nodes in the network and why are they there?
2. What is the KI doing and why do they do it?
3. What technologies are used to establish and operationalize the network?
4. Compile a one-page summary of the RAPTR to take into the field as "Cliff's Notes" for the observation.
5. Compose reflective memo to myself (MTM) by using the gerund list to review the network for pertinent activities.
 - Finding, someone, something
 - Learning, about someone, something
 - Nurturing, someone

- Pruning, by removing something or someone from the network
 - Moving, from one place to another
 - Managing, relationships within the network
 - Negotiating, in order to establish, define obtain
 - Controlling, by limiting the degrees of freedom of someone or something
 - Leading, someone
 - Reflecting, upon actions, identities, people
 - Identifying, creating an identity for self or other
 - Borrowing, something from
 - Giving, something to
 - Getting, obtaining
 - Buying, purchasing
 - Capitalizing, obtaining capital to support activities
 - Serving, providing for others
 - Bounding, demarcating boundaries around parts of the network
 - Bonding, attaching to someone
 - Imposing meaning, interpreting an action or person as meaningful in some way
 - Tinkering, playing with relationships, things, people to change them
 - Reengineering, intentionally redesigning things, people, relationships so they conform to what you want.
 - Posing, or presenting yourself as someone or something.
 - Consuming, of ideas, stuff, etc.
6. Note reasons specific nodes have been chosen for interviews.

After the initial interview, two data collection activities follow: observation and nodal interviewing.

They may be interspersed with each other.

Observation

1. Observations are made by shadowing the key informant for 10-12 hours during 1-3 visits. Part of the shadowing must occur in the household.
2. The fieldworker probes during the observation and writes field notes. The probes are descriptive ones designed to provide full understanding of RAPTR. Probes include (1) what are you doing? (2) what is this place? (3) where are you connecting to (when visiting virtual nodes)? (4) why did you do that? (5) who is that person? (6) how often do you do that? (7) is that a regular activity or irregular one? and so forth.
3. The fieldworker also writes MTMs in his or her notes to indicate when someone is or has been doing many things at once, i.e., multitasking or multicontexting.
4. Fieldworker notes clock times every 30 minutes to facilitate calibration of notes.

Observation Interim Summary

1. This summary should be prepared after each day of the observation.
2. Fieldworker writes MTMs to identify any changes or shifts in context that occurred during the observation period, especially in terms of multicontexting.
3. Revise the master network map to incorporate the results of the observation.
4. MTM on impressions of the network: Are there any methodological lessons to incorporate into the next activity? Were there any striking or distinct incidents or events?
5. Identify places to clarify the network map during the exit interview.

Nodal Interview

Nodal interviews should be conducted with five people per KI. One must be a member of the KI's household. Ideally, one will be a "node of a node" so we can assess the role of a node in providing or restricting the KI's access to relationships.

1. Generate a graphical map of the person's relationships to people and virtual sites.

2. Elicit data about the nodal interviewee's activities and relationships with people. Probe gently to elaborate on activities done with specific people with whom there is a relationship.

2.1 Who or what is the node?

Probe: What is their/its name?

Probe: How did the node become part of your network?

2.2. What is your relationship with _____ (the node)?

Probe: How do you describe your relationship with the node?

2.3. What activities do you do with _____ (the node)?

Probe: How often do you do those activities?

3. Assess nodal interviewee's network nodes and decide whether to interview one and how to set up logistics.

Nodal Interview: Interim Summary

1. Map the nodal interviewee's network.

2. Incorporate nodal interviewee's network map into the master network map.

3. Review the interview with the list of gerunds to find pertinent examples.

4. Attempt to assess the relationship of nodal person's network to the key informant's, and thus the centrality and peripherality of each.

Exit Interview

1. Clarify observational ambiguities and revise the master network map in consultation with the KI.

2. Redraw and recluster the master network map with the KI.

3. Probe the KI about his or her connections to the networks of the nodes he or she identified.

3.1. Tell me about a time when you tinkered with or rearranged part or your entire network.

Probe: What part did you tinker with or rearrange?

Probe: Why did you tinker with it or rearrange it?

Probe: How did you accomplish this?

Probe: What were the results of your efforts?

3.2. Tell me about a time when you pruned or eliminated people from your network.

Probe: Who was eliminated?

Probe: Why were they eliminated?

Probe: How did you prune them?

3.3. Tell me about a time when you received goods, services, or information through your network.

Probe: What did you get?

Probe: From whom or where did you receive it?

Probe: Why did you receive it (a purchase, loan, gift, or so on)?

Probe: What did you give in return?

3.4. Tell me about a time when you gave something (goods, services, or information) through your network.

Probe: What did you give?

Probe: To whom did you give it?

Probe: Why did you give it (a purchase, loan, gift, or so on)?

Probe: What did you receive in return?

3.5. Think about a time you and the people in your network did something together that was special.

Probe: What was it that you did?

Probe: Who was involved?

Probe: Why were these specific people involved?

Probe: Who initiated it?

Probe: How did it get organized? Who organized it?

Probe: Was there any dissension or disagreement about the activity?

If so: What was the dissension about?

If so: How did the network handle it?

If not: Try to remember another time when the people in your network did something together and there was dissension.

Probe: What was the activity?

Probe: What was the dissension about?

Probe: How did the network handle it?

3.6. How do you present yourself or interact with the people in this cluster of your network?

Probe: What are the differences in how you present yourself to the different clusters?

Probe: Why do you present yourself in those different ways?

Probe: How did you learn to present yourself in those ways?

3.6.1. Do you ever create a new identity for yourself to use online in your network?

If so, What was the identity?

Probe: Why did you choose that identity?

Probe: How did you use the identity?

Probe: What happened as a result of creating and using the identity?

3.6.2. Do you ever create a new identity for yourself to use with people face-to-face in your network?

If so, what was the identity?

Probe: Why did you choose that identity?

Probe: How did you use the identity?

Probe: What happened as a result of creating and using the identity?

3.7. Is there anything else important about your networks that you can tell me?

Exit Interview Interim Summary

1. What do you believe we know with some certainty about the network and where do you believe there are gaps?
2. What do you believe are the methodological lessons to be taken to the next cluster?
3. What do you think is distinctive, revealing, or otherwise important about this cluster?

Appendix III

Global Youth Networks: Research Participants¹

| Silicon Valley

KEY INFORMANT—BERNARD

Bernard is a 20-year-old electrical engineering-anthropology major who currently lives in Silicon Valley. He is French, and his parents live and work in Tahiti, where Bernard spent his middle childhood. Bernard attended high school and community college in the United States before transferring to a university. He has lived extensively apart from his parents and has established relationships with several different “host families.” In addition, he has formed many friendships in the different places he has lived and attended school. Bernard is interested in combining the technical skills of his electrical engineering major with an understanding of diverse human cultures to create a business that offers distinctive services and products.

Nodal Interviews

Yoko. Yoko is a Japanese student living in the United States who is largely estranged from her family. Yoko describes herself as a “lone wolf” who does not socialize extensively with people, including Bernard. She considers Bernard a friend, but one she keeps in touch with mainly by e-mail, although they attend the same university and many of the same classes.

Stan. Stan works for the company where Bernard has a paid internship, and he subsequently became his landlord. Stan is Mexican-American and has wide, deep ties to that community with connections to an older generation of Mexican-American leaders directly and indirectly through his deceased father. Stan also has extensive ties to smaller high-tech companies and to his university’s business college.

He is clearly a node that Bernard will use (and has used) to get feedback about his business plans.

Henry. Henry is a classmate of Bernard. His family is from Eritrea. Bernard met him at his father’s hot dog cart on campus. He is the eldest of five brothers and has clear-cut priorities: school, family, helping out at the hot dog stand, and working weekends as a security guard.

Mel. Mel is a friend from a California community college connected to a large network of people who have or have had substance abuse problems. Bernard admires his efforts to overcome his problems, although he doesn’t connect with many of Mel’s friends.

Simone. Simone became Bernard’s surrogate mother when he lived with her during high school. She is an archaeologist with widespread connections in the South Pacific, one of whom is Bernard’s father. She recently completed her doctorate at University California, Berkeley, and her identity is very much wrapped up in her professional practice.

Samuel. Born in Strasbourg, France, of an American mother and an Iranian father, Samuel is 20 years old and one of Bernard’s closest friends. He and Bernard attended a French high school in San Francisco together. Like Bernard, his connections from high school link him to places all over the globe. Samuel also has deep connections to the Judo community in the United States and in Europe and has competed professionally. Today, he works in a coffee shop in San Francisco, is a fan of new age mythology, and is learning C++ and Java programming for the role he will play in Bernard, Inc.

Michelle. Michelle is Bernard’s mother, who lives in Tahiti. She supported his interest in the arts when he was younger, but their relationship today is quite

¹ We have used pseudonyms to protect the privacy of the participants.

volatile. Michelle is a nurse whose life revolves around meditative reflection. It is far removed from Bernard's fascination with technology and building a company.

KEY INFORMANT—GARY

Gary is 25 years old and single. He grew up in Eugene, Oregon, and has four half-brothers and two half-sisters. He went to Pennsylvania State University, originally to play basketball, but he changed his mind when he found college basketball too commercially driven. While at Penn, he spent four months in Botswana as part of a study abroad program. Gary did not like living on the east coast, but some of his closest friends come from his time spent there. Today, Gary works at an alternative school in Menlo Park, California where he is a teacher's assistant and organizes an environmental education program for children, which relates to his interest in the outdoors. Gary's passion is playing the guitar, and he has formed a band, mostly with his work colleagues, that plays music largely influenced by the Grateful Dead.

Nodal Interviews

Alistair. Alistair is Gary's roommate. They met at Pennsylvania State University and bonded by helping each other through the difficult time both experienced there. Alistair grew up on Long Island, and after leaving Philadelphia lived in Colorado for two years "being a ski bum." He came to California in part to play music with Gary, and he works at the same school in Menlo Park.

John. John is 31 years old and Gary's half brother. He lives in San Francisco, but has been involved in the Stanford University community for the last ten years. He has an undergraduate degree from that school and worked as an administrator at the university's athletics' department before getting an MBA, also from Stanford. He now works as an assistant athletic director for the Stanford men's basketball team. Gary and John are best friends; they play bas-

ketball together, and last summer spent three weeks in Africa.

Derek. Derek grew up in the same town as Gary, and they have known each other since nursery school. They consider each other brothers. Derek used to live with Gary and teach at the same school in Menlo Park before leaving for Japan last year. Upon returning, he moved to San Francisco, where he works at a commercial real estate company "to pay the bills." He studied theater in Oregon and wants to be an actor. Derek loves living in San Francisco and is trying to persuade Gary to move there as well.

Ben. Ben is another of Gary's friends originally from the east coast. They met through a mutual friend in Philadelphia, but now Ben lives in Berkeley and studies creative writing and literature at San Francisco State University. He loves to travel and has done so extensively, most recently having lived in Japan for five months. Ben and Gary often go to concerts together in San Francisco.

KEY INFORMANT—CINDY

Cindy turned 16 while participating in our project. Her family is from Taiwan, but she was born in Texas and moved to Silicon Valley when she was four. Her father has since died, and her mother is the central figure in her life. She has one older sister at the University of Southern California, but they are not close. Nearly all her interactions with her sister are moderated through her mother. Cindy has three best friends she has known from childhood with whom she shares her thoughts and dreams. They are on the badminton and tennis teams together, and shop and hang around.

Nodal Interviews

Joan. Joan is Cindy's mother, a woman in her mid-40s who is a native of Taiwan. She stays in contact with her own family in Taiwan. Either one of them visits the United States, or she goes to Taiwan, about

every two years. She works in accounting in a fiber optics company, but her company is laying off employees and she is worried about their financial future. She has pursued a real estate license and plans to work as a realtor in the future. She also hopes to make more friends and pursue hobbies. She is clearly waiting. Waiting for the economy to shift, waiting for her children to grow, waiting for her future life to begin.

Anh. Anh is Vietnamese-American and a classmate of Cindy's. Her world is concentrated around high school friends, online friends, and badminton friends. She identified four friends as her best friends (one of whom was Cindy). Anh had over 150 names on her buddy list, yet she named relatively few people as "online friends." She explained this by saying that some people have more than one screen name.

Tran. Tran is another Vietnamese age mate of Cindy's. She lives in a mobile home park (she refers to it as "the park") about a mile from East Valley High School. Tran's network can easily be divided into two clusters, her family and her school friends, which consist mostly of girls she plays tennis or badminton with. Along with Cindy, she is an advanced student of Japanese and involved in advanced placement courses. She spends time chatting online, but only with people she already knows from school.

Julio. Julio is Cindy's online buddy. They became friends in her sophomore year (2000-2001) in Algebra 2. He has one of the more complex webs of relationships and is quite distinct from the others in this cluster. He is 18 and is planning to go to the Culinary Institute of America (CIA) cooking school in San Francisco beginning October 1. To that end, he has moved to Berkeley, although he comes back to San Jose almost daily. He does not like telephones and prefers face-to-face contact and instant messenger, which he sees as more personal than phone calls.

KEY INFORMANT—DAVID

David is 15, ethnic Chinese Vietnamese, and attends Eastside Valley High School, where he is a sophomore and a first-year student of Japanese. David has an interest in gaming, computers, and ROTC (Reserve Officer Training Corps). His immediate family consists of his mother, father, and younger sister, but a large extended family lives close by. Indeed, his father works with his uncle. Other than hanging out with his ROTC friends, his free time is spent mainly on the computer and the Sony PlayStation. His time is largely structured by school and ROTC, and his free time around unplanned encounters. David has between seven and ten people living in his house at any given time. Some are Vietnamese- and Chinese-speaking college students who act as informal tutors; others are likely to be relatives.

Nodal Interviews

Ren-Ren. Ren-Ren is in his mid-20s and lives in David's household. He has a job in a medical device company and is currently attending San Jose City College, although he is finishing a degree at San Jose State University as well and had nearly finished a degree in the People's Republic of China before he came to the United States. He divides his network into categories such as school friends from the college, family in China, family in San Francisco, and coworkers from his current job. He listed online buddies that he never saw face-to-face. David's mother was once his coworker, hence the tie to the household.

Christina. Christina is nearly 18 and a commander in Eastside Valley's ROTC program. She emphasized the fact that there are layers of trust among her network and that she really controls the information she gives to people, except for her two best friends, to whom she can say almost everything. Her dad, her dad's sister, and her dad's mother are also

people she would put on her network map. She refers to the ROTC Master Chief as her second dad.

Victor. Victor is a 16-year-old Latino ROTC and gaming enthusiast and one of David's best friends at Eastside Valley. Although Victor met David at school in ROTC, David is more than just a school chum. Victor considers David to be a friend who can be trusted. They share an interest in computers and computer games, and recently have taken up paintball.

Khanh. Khanh is a 16-year-old female student at Eastside Valley who plans to become a physician. Her relationship with David is problematical. Khanh's best friend is Hanh, whom David adores; however, Hanh does not return the feelings and in fact has rejected him. This puts Khanh in the middle. Khanh was born in the United States to parents of Vietnamese background and takes pride in being a "traditional girl," who is able to speak Vietnamese.

Mr. Jones. Mr. Jones is the network architect of the Japanese program at Eastside Valley High School who enlisted both David and Cindy. He is keen to use technology to teach and encourage students to experiment with learning.

KEY INFORMANT—MOIRA

Moira is 13 years old. She completed eighth grade at the only school she has ever attended, a Catholic elementary school near home. Both of her parents are professionals who work in the public sector. One runs a prominent educational program and the other is president of a nonprofit organization. The family has an active social life and is embedded in a web of other families connected through school and work. Her parents encourage her to do well in school, which comes easily to her. Upon graduation from the eighth grade, she had her choice of Catholic high schools, and, unlike most of her friends, she chose to attend a coeducational school. Thus, she has left the company of many of her long-time friends. Moira

has a very simple network divided into three branches that overlap a bit: (1) school, (2) theater camp, and (3) other (including family).

Nodal Interviews

Barry. Barry is Moira's 17-year-old brother. They argue and bicker, but still engage each other. Barry divides his own network into three categories. There are his close friends—several boys from elementary school. They now attend another school, but live close to him. This is his primary group of friends. Second is a group of close school friends, and third, not-so-close school friends. School friends move between the close and not so close categories, but he says he keeps both separate from his geographically close friends. Barry also mentions sports, scouts, and work as less prominent categories in his network, as well as family.

Jackie. Jackie is a long-time friend from school. She and Moira are close friends, as are their mothers and fathers. Jackie also shares Moira's interest in theater, but, unlike Moira, she opted to attend the same girls' high school as most of their other elementary school chums.

Holly. Holly is a former neighbor of Moira's. She is married with three small children. While in elementary school, Moira stopped by one or more days each week after school to hang out, baby-sit, entertain the children, or help in food preparation. This relationship will change now that Moira attends a high school that is farther away. Holly was chosen as a node because she is an adult with whom Moira has a relationship somewhat independently of her parents, although Holly and her husband are part of Moira's parents' network.

Barb. Barb is a newer friend of Moira's, one who has seemingly replaced another older friend in emotional closeness. Barb has not attended the same schools as Moira. They met each other through theater camp. As Moira's relationship with the other

friend from school faded, her relationship with Barb has grown.

KEY INFORMANT—LUIS

Luis is 20 years old. He came to Silicon Valley from Argentina with his parents when he was 9 months old and has lived here ever since. He lives with his parents and younger brother, but spends a lot of time with his girlfriend, who lives nearby. Luis is attending college, but has not figured out what to major in. He also works for his mother, who runs her own recruitment company. The family has an extensive network and he stays in contact with relatives.

Nodal Interviews

Rosa. Rosa is Luis' mother. She's an entrepreneurial woman, who has worked her way up since she came to the United States from Argentina almost 20 years ago. Today, she runs a successful employee recruitment and placement business in the Silicon Valley. A natural matriarch, family and friends are central to Rosa; she initiates most social activities in the family network.

KEY INFORMANT—MIKE

Mike is 24 years old, lives with his parents and brother, and works as a researcher at a consulting company in Silicon Valley. His parents are from Cyprus and Lebanon, and he has a wide network of relatives both locally and overseas. Mark's immediate network is defined mainly by school friends (high school, college, and graduate school), with the majority of them living in the Bay Area.

| Nordic Europe—Stockholm and Helsinki

KEY INFORMANT—ANTON

Anton is a Swedish 18-year-old. He lives in downtown Stockholm with his mother. His parents divorced when he was four years old. His father has

since married a British woman and is in the process of moving to the United Kingdom. Anton also has a 30-year-old stepsister, who has a daughter of her own. Anton is in his second year of Swedish upper secondary school, which focuses on IT and is located in a high-tech suburb of Stockholm. Anton's network is highly IT centric. All friends in the network but one have Internet connections at home, and most of his friends have a strong interest in either Web design, programming, 3D images, or other IT skills. Two years ago, Anton met his girlfriend, Malin, on a Swedish chat site. She lives in Gothenburg. They talk for hours on the phone every day and meet every second weekend.

Nodal Interviews

Rosa. Rosa is Anton's mother. She divorced Anton's father when Anton was four. She works for a large Swedish bank in Stockholm, and is socially active with hobbies and friends. She is close to relatives in northern Sweden.

Josa. Jonas is Anton's friend from junior high school. He also lives in downtown Stockholm and attends the second year of the social science program in high school. His "real" friends are all boys; his "virtual" friends are all girls. He likes hanging out with Anton, since they know each other from way back, but Anton often thinks of Jonas and his IT-skilled friends as IT nerds.

Malin. Malin is Anton's girlfriend. They met in an Internet chat room. Malin lives with her parents and two younger siblings in downtown Gothenburg, 500 kilometers from Stockholm, and attends an agricultural program at high school there.

Anders. Anders is Anton's oldest friend. They know each other from kindergarten and have kept in touch on and off throughout their childhood, although they have not attended the same schools. Anders also attends an IT high school. The last few years they have grown closer, since they share a common inter-

est in IT. Anders just moved away from home to live with his girlfriend in a flat in a Stockholm suburb.

KEY INFORMANT—GEORGINA

Georgina is a 17-year-old who lives with her mother in Stockholm. She is Jewish and was born in Ukraine. Her parents were divorced when she was 3, and she came to Sweden with her mother when she was 4. Her mother has been living with a boyfriend whom Georgina refers to as “my dad, kind of.” Two stepbrothers (her father’s sons) also live in Sweden, and Georgina and her family see them regularly. Georgina’s father moved to Canada from the Ukraine and married a Jewish Ukrainian woman with whom he has a daughter. Georgina spends summers with her father and his family in Canada. She also visits her grandparents and uncle (on her mother’s side) in the United States. She attends an experimental high school in Nacka, Stockholm, where the learning is project-based and flexible in terms of schedule. Her life revolves around her friends from school and various former and prospective boyfriends.

Nodal Interviews

Lisa. Lisa is Georgina’s closest friend in high school, and they refer to each other as sisters. Georgina spends most of her time with Lisa since they live in the same neighborhood and commute to school together every day. Lisa’s parents are divorced and she has no contact with her father, but does have a very close relationship with her mother’s ex-boyfriend and his family. She is into dance (hip hop) and at school hangs out with the same circle of girlfriends as Georgina does.

Marina. Marina is Georgina’s mother. She is in her 40s, and came to Sweden with Georgina, studied at the university in Stockholm, and is now working as a nurse at one of the big hospitals in the Stockholm area. After marrying a Swedish man, her family has

expanded to include two stepsons, but Georgina is the most central person in her life. Marina sometimes socializes with colleagues from work, but spends most of her time at home with her family.

Stina. Stina and Georgina went to the same Jewish school in downtown Stockholm until they started high school. They now attend different schools, and though their time together has been reduced dramatically, they try to meet once a week. Stina is also from Ukraine and came to Sweden when she was 10 years old. Her life is less “Swedish” than Georgina’s. Stina speaks Russian at home, and is engaged to a young Ukrainian man studying in Israel, where she plans to move as soon as she finishes high school.

KEY INFORMANT—FRANK

Frank is a 25-year-old Swede. He grew up in southern Sweden, where his parents are still living. His sister (four years older) lives in Stockholm and works at a large Swedish corporation. Frank is studying at the University of Gothenburg in the International Economics and Business Program. He has been there five years even though the program requires four years of studies. Frank has had several breaks from school for studies, trips, and internships throughout the world. He plans to graduate in six months. Currently, he is writing his master’s thesis on electronic customer relationship management together with his good friend, Alexander. Frank’s closest friends are all from the university—about eight guys, who make up the core of his network. They share many experiences abroad.

Nodal Interviews

Alexander. Alexander (24) is one of Frank’s best friends, whom he met when he started university. They are currently writing their master’s thesis together at the University of Gothenburg, and have shared many experiences during their five years at

the university. Alexander also grew up in southern Sweden, but has a big family that reaches into Argentina, where he spent a school year abroad at an Argentinean university. Alexander is currently job hunting and open to offers abroad.

Johana. Johanna (29) is Frank's older sister. She is living with her fiancé in Stockholm and working for a large Swedish corporation. Like Frank, Johanna has traveled widely and studied and worked abroad for extended periods of time. She stays in close contact with her girlfriends from university, and with friends of her fiancé. She describes how her relation to Frank has improved during his university years, and how he is a great source of inspiration and fun for her.

Jonas. Jonas is another of Frank's close university friends. He has recently graduated from the International Economics and Business Program, but has remained at the university this semester to study psychology. Jonas has lived in Gothenburg since he was 13, but just like the other guys in the network, he has been traveling extensively. He has a strong interest in sports and health and has taken on the role as the "sports coach" for his friends. He stays in close contact with childhood friends, especially through weekly soccer games.

Mats. Mats is a student at the International Economics and Business Program at the University of Gothenburg, but in a younger class. He met Frank on a study tour to Japan a couple of years before and they have stayed in touch ever since. Mats is clearly aware of his network and describes how he appreciates a wide diversity of friends.

KEY INFORMANT—ARTHUR

Arthur is 25 years old and lives in Helsinki, Finland, as he has all his life. He is currently studying sociology at the University of Helsinki, with plans to finish his M.A. at the University of California in

Berkeley. When he was a high-school student, Arthur joined a Finnish multimedia firm, and he has been working in the area since. He became a freelancer a year and a half ago and now consults for several new media enterprises and venture capitalists. He is a supporter of environmental and anti-globalization movements and makes his own small contribution by bicycling in downtown Helsinki, where he shares a flat with two other men.

Nodal Interviews

Virpi. Virpi is Arthur's girlfriend. She is 24 years old and works as the PR person for a new media cooperative founded in downtown Helsinki by Arthur and two other friends. Virpi lives in a small house in the woods outside Helsinki and often has garden parties at the house. She also studies sociology at Helsinki University, where she met Arthur. Virpi's interests are African dancing and yoga; she is ecologically minded and an active member of a fair trade organization in Helsinki.

Antti. Antti is 23 years old and Arthur's roommate in Helsinki. He also studies sociology at the University of Helsinki. Antti is an old childhood friend of Arthur's girlfriend Virpi and both lived in Palo Alto together in 1996. Antti is the co-founder of the Helsinki-based new media company.

Jokko. Jokko is 30 years old and married. He works as a director for a new media company designing interactive Web sites for telecom companies, and actively participates in the media cooperative with Arthur. He lived in New York for a few years while studying philosophy at Columbia University and playing in a band. He is currently writing his Ph.D. dissertation. Jokko is a self-confessed news junkie and has set up personal Web sites for his news consumption, which he also shares with his friends.

Tapio. Tapio is 23 years old and lives in Helsinki. He worked with Arthur as consultant to a new media company and is now his colleague at an Internet por-

tal. Tapio is planning to study psychology at the University of Helsinki next year. He is involved in several local associations, among them Helsinki's new media cooperative and others concerned with culture, society, and the environment.

KEY INFORMANT—AARON

Aaron is a 16-year-old male high school student from Tapiola, Finland. He lives with his parents and two younger sisters (12 and 14) in an apartment building near a Tapiola shopping center. He plays tennis and the piano. Aaron's network is organized into three clusters: family, friends he met in English language camp in England, and friends from childhood.

Nodal Interviews

Marko. Marko is 16, a friend of Aaron's from childhood. He lives on the same block as Aaron. Marko spends a lot of time by himself in front of the computer. When he is with Aaron, they play computer games.

Anja. Aaron met Anja in English language camp in the United Kingdom two years ago. Anja lives in Helsinki, dances, and plays basketball. She usually hangs out with two close girl friends, one of whom is Mira (see below).

John. Aaron met John in the United Kingdom at English language camp. He lives in Laajalahti and plays computer games. He usually hangs out with Aaron, Anja, and Mira (see below).

Mira. Mira is another friend from English language camp in the United Kingdom. Mira lives in Helsinki, plays piano, enjoys horseback riding, and attends the same high school as Anja.

Laura. Laura is 14 and Aaron's younger sister. She plays piano, dances, enjoys horseback riding, and spends a lot of time with their younger sister.

KEY INFORMANT—ANNE

Anne is 20 years old and graduated from high school about a year and half ago. She lives in an upscale neighborhood in Helsinki in an apartment owned by her parents. She attends a vocational school, where she studies tailoring and fashion design, and has aspirations for studying fashion design at a university. She also has an interest in business and would like to pursue some study in business management. Socializing is an important part of Anne's life. She likes to go out to clubs with her friends, hang out at friend's homes, and host evenings at her place. Her friends visit her often because her apartment is in a relatively central location in Helsinki. For Anne, you are not in her social network unless your number is in her mobile phone. People are added and pruned with the help of her Nokia. Anne has an older sister who used to live with her but moved to an apartment vacated by one of Anne's friends. Anne's parents live in the countryside, and they visit a couple times a month. Currently, she is working as a waitress at a local restaurant, though she is still financially dependent on her parents.

Nodal Interviews

Laura. Laura is a friend Anne met when they worked together at a restaurant in Helsinki. Anne has spent a lot of time talking with Laura and considers her one of her most trusted friends. Laura appreciates Anne's designs and has given her fabrics from travels overseas. Laura has many friends in Ireland—a resource she has shared with Anne. Laura recently moved to Frankfurt, Germany, and so their friendship will now shift from face-to-face to e-mail.

Kaisa. Kaisa (24) is Anne's older sister, with whom she has a strong relationship. They spend a lot of time together going to bars, clubs, and parties. Kaisa used to live with Anne but will be taking Laura's

apartment once Laura moves to Germany. Kaisa does not have common friends with Anne but does enjoy hanging out with her sister's friends. Kaisa recently spent some time studying the Amazon in Brazil.

Eeva. Eeva is 22 and one of Anne's friends. They attend the same classes in fashion design, and they support each other in school and raise each other's spirits in and out of school. Eeva and Anne communicate quite a bit via SMS messages, often reminding each other about school schedules and managing the logistics of their social lives after school.

Marja. Marja is a neighbor and friend. They meet often because their apartments are very close to each other. In fact, when Anne wants to talk with Marja, rather than sending her an SMS message she literally writes "Hi" on a piece of paper and tapes it to her window where Marja can see it from her own apartment. It is not uncommon for them to cook dinner together and go over to each other's apartments to have tea and chat. Anne met Marja through a friend at one of her parties. They are now close friends and often talk about relationships and social crises, and occasionally help each other with money to make ends meet. Every Thursday (now a tradition) they make sure to meet for wine and cheese.

Minna. Minna is 21 and a friend that Anne met while working at a restaurant in Helsinki. Minna joins Anne on nights out to bars or cafés. They usually go out every other week and have their own traditions—Pravda for drinks and Kerma for clubbing. Minna has a car and Anne enjoys rides in it to the countryside. For Anne as well as Minna, getting in the car is a big occasion. Their friendship is not tied to Helsinki; they often go to summer cottages or ski areas together. Minna is aware of Anne's other friends, but they are never in contact with each other.

| United Kingdom—London and Glasgow

KEY INFORMANT—RICK

Rick is a 17-year-old high school student finishing his last year of (as he puts it) compulsory education. He wants to go to Cambridge University—he is already being wooed by recruiters. Rick is multiracial (white and black British), but is not preoccupied by his background, nor does he find it relevant to his identity. Rick identifies with hardcore music and Straight Edge, a subculture of the hardcore music scene that practices abstinence from alcohol, drugs, tobacco, and sex. His parents are divorced and he lives a week on and a week off with each. His father teaches vocational skills to immigrant students entering the workforce at a middle school in London. His mother is a professor at a university in London. There are no other siblings in the household, although Rick does have several "surrogate" brothers and sisters. As he put it, "they know my middle name. That's the test." Rick is also a node in Allison's network (see below).

Nodal Interviews

Nadine. Nadine is Rick's mother. She is a renowned black-British cultural theorist, and besides her teaching job at a London university, she is involved in black cultural politics. For her work in preserving the black heritage in Britain she received an Order of the British Empire medal from the Queen in 2001. Somewhat of a celebrity, she often appears on television or is quoted in newspapers commenting on British society, cultural politics, and the media.

Barbara. Barbara is 18 years old and lives in a small town about one hour outside of London with her parents and twin sister. Her father was a schoolmate of Rick's father, and their friendship has led to a similar relationship between their families. Rick

usually sees Barbara during family events and music festivals, where both families camp out for several days. Barbara is in her last year of high school and wants to go straight to university.

Anand. Anand is a 16-year-old British Indian. He lives with his uncle in London because his mother moved with her new husband to the outskirts of London, but he had to stay close to his high school. He is very reflective about his life, especially after his best friend committed suicide two years ago. His connection to Rick is via music (Anand has his own band) and clubbing, but he is too young to get into most clubs, which makes him somewhat of an outsider to Rick's crew.

Chris. Chris is 17 years old and lives with his mother in London. He is Rick's best friend, and they are like brothers, having known each other since nursery school. They spend most of their days with their friends, playing music in their hardcore band, and going clubbing or to gigs in the evenings. Chris is taking a break from school and works at his uncle's construction company, but plans to finish high school next year.

Allison. Allison is 18 years old, lives in London with her mother, a natural healer, and just finished high school at an all-girls Catholic school. She plans to take a gap year and work for six months, after which she wants to travel in Australia, where her mother's family lives. She met Rick at a hardcore music concert two years ago, and music is the main bond of their friendship. Allison is also a key informant (see below).

KEY INFORMANT—PAM

Pam is a 23-year-old living in Glasgow. She grew up in Glasgow and, as an only child, is very close to her parents. Her father is a retired banker and her mother is a teacher and administrator at a community col-

lege. In the summer of 2000, Pam graduated with an M.A. in product design engineering from Glasgow University. Since April 2001, she has been working for a California startup that opened an office in Glasgow, and recently she founded her own consulting company. She has had a few relationships and is currently living with Rob, a friend from university.

Nodal Interviews

Claire. Claire is Pam's mother. She is a teacher and administrator at community college in East Glasgow, which provides access to IT to the people living in this underprivileged part of the city. Claire is interested in literature and the theater, and she has a small circle of friends built around these interests. She is supporting Pam in all her endeavors, but at the same time is respectful of the boundaries of her daughter's life.

Ian. Ian is a 23-year-old graduate in music and electronics from Glasgow University. He is from the north of Scotland, but has lived in Glasgow for the last five years and built an entirely new network around music, which is his main interest. He joined the company Pam is working for, and they have quickly discovered common acquaintances and interests.

Rob. Rob is Pam's flat mate and boyfriend. Rob is a graduate from the same university course as Pam, and has been working for an electronics company outside of Glasgow since graduation. He also grew up in northern Scotland, and some of his closest friends are from his time back home. Rob likes working out, and Pam and he have many friends in common.

Elizabeth. Elizabeth is one of Pam's best friends. They attended the same university and were roommates for two years. Elizabeth, who is originally from the North of Scotland, moved to London after she graduated to work for an electronics textile start-

up company, a job she likes for its creativity. Her boyfriend lives in Nottingham, but is planning to find work in London, where they want to move in together.

Ewen. Ewen is 23 years old and grew up in the north of Scotland. He is a graduate from same university program as Pam, and their strong friendship is based on a common interest in technology and a year they spent as exchange students in Holland. This experience has led to Ewen's great interest in travel and foreign languages. Ewen works at a structural engineering company in London. Ewen is also a key informant (see below).

KEY INFORMANT—EWEN

Ewen is a 23-year-old currently living in London. He grew up in Hamilton in northern Scotland, and has one younger brother. Ewen is single. He graduated with an M.A. in product design engineering from Glasgow University in the summer of 2000 and has been working for a structural engineering company in London since November 2000. Ewen's main interests are foreign languages, of which he is studying several, and traveling abroad—interests that were shaped during a year he spent as an exchange student in Holland. Although he found the move from Glasgow to London difficult, he is slowly building a new network of work colleagues and roommates. Ewen is also a node in Pam's network.

Nodal Interviews

Pam. Pam is a graduate from the same university course as Ewen, and is currently working for a California start-up technology company with an office in Glasgow. Pam and Ewen's friendship is based on a shared interest in technology and the year they spent together in Holland on a student exchange. Pam is also a key informant.

Elizabeth. Elizabeth is 24 years old and lives in London, where she works for an electronics textile startup company. She grew up in northern Scotland and is a graduate of the same Glasgow university course as Ewen. Since both live in London, they see each other occasionally, but Elizabeth spends most of her weekends with her boyfriend, who lives in Nottingham. She is also a node in Ewen's network.

Thomas. Thomas is Ewen's younger brother by two years. He is studying electronics and software in Glasgow, but just moved to Cambridge for six months for a work internship, a position he obtained through a friend of Ewen's. He and Ewen are very close and share common interests in literature and music. Thomas is a member of two bands and has built a network around his music interests.

Frank. Frank is 23 and lives in Oxford, where he works for a technology startup company. He spent much of his childhood in Fiji, where his father worked as a geologist. There he developed a liking of water sports, which he still pursues. He graduated from the same university program as Ewen, and went to Holland with him. He enjoys living in Oxford, where he hangs out with a mix of new people and old university friends who have also moved to the south.

Shubhra. Shubhra is a 28-year-old British-Indian woman who grew up in Birmingham and studied international relations. She has traveled extensively and lived in Japan for several years. Her network is extensive and diverse. Currently, she works as a campaigner for the Asia region of Amnesty International, a job in which she expects to meet like-minded, politically active people. Ewen and she share a flat together with a German colleague of Ewen's. Ewen enjoys learning about Shubhra's travels.

KEY INFORMANT—ALLISON

Allison is 18 years old and lives in London with her mother. She just passed her high school exams at a Catholic all-girls school and is taking a gap year to work and then travel to Australia where part of her mother's family lives. After that she plans to go to university to study geography. Allison has a tight network of girlfriends, many of whom share an interest in hardcore music. Going to clubs is their main social activity. Although Allison has a cell phone and a computer with Internet access, she considers herself somewhat antitechnology and prefers human interactions to e-mail or phone calls. Consequently, her closest girlfriends are frequently found at her house.

Nodal Interviews

Rick. Rick is 17 years old and lives in London, where he is finishing his last year of high school. Allison met Rick at a hardcore gig two years ago, and their friendship is based on this shared interest. They usually meet at concerts or clubs and go to music festivals together. Rick is a passionate guitar player and has his own band. Rick is also a key informant (see above).

Sara. Sara is one of Allison's closest girlfriends. She spends a lot of time at Allison's house, partly because she does not get on well with her mother. Allison and Sara are planning to travel to Australia together. To finance her travel, Sara is working at the Sainsbury supermarket chain. Allison and Sara frequently go clubbing together, and attend shows and music festivals. These experiences are the foundation that supports the strong bonds of their friendship.

Susan. Susan is another member of the Allison's tight group of girlfriends. She attended the same school as Allison and is going on to university right away. Susan used to sing in a prestigious choir and still plays the violin. Part of her family lives in Ireland, and she visits them twice a year. Her moth-

er is of Swedish descent and keeps the Swedish traditions alive in the family. Allison and Susan like the same kinds of music and thus go to a lot of the same clubs and concerts together.

Natasha. Natasha is Allison's mother. She works from home as an Alexander teacher, and healing in the natural way is the basis of many of her strong and long-term relationships with friends and colleagues. It also provides a special relation to Allison, and both have a very close and "easy" relationship. Allison does administrative work for her mother to make the money she needs to travel to Australia.

Karina. Karina is Chinese-British and goes to the same school as Allison. She is not only part of the tight circle of girlfriends, but she also has gone on several trips to Crete with Allison and her mother. She spent the summer after her graduation in Malaysia working in a designer studio of her mother's friend, and then started a one-year art foundation course at a university in London in preparation for an art degree.

| JAPAN

KEY INFORMANT—MASA

Masa is a 23-year-old who lives about one hour southwest of Tokyo in a beach apartment owned by his parents and located in the town where he was born and grew up. Although he sleeps in the apartment, he has most of his meals with his mom (and occasionally dad) in the family house, which is a 10-minute car drive from the apartment. Masa just graduated from university with a degree in computer engineering. During his first two years of university, he lived on his own in an apartment near school. After that, the campus moved to downtown Tokyo, and then he moved back to his hometown and into the beach apartment. Masa has two older sisters. The oldest is married with three children. Both his par-

ents work and are very busy with the family business—a tuna-fish trading company. Masa has strong interests in community Web sites he built for two of his network clusters and relies on the message boards on these Web sites to stay in touch with his busy friends. Masa is currently getting ready to go to California to study English and marketing for one semester.

Nodal Interviews

Gaku. Gaku is a high school friend living in the same town as Masa. His parents are divorced. Currently, he is in his senior year of university study with a major in philosophy and plans to attend graduate school in philosophy as well. He has a passion for movie making. After graduate school, he plans to go to the United States or the United Kingdom to pursue filmmaking. He works part-time as a waiter.

Yumi. Yumi is Masa's mother. She is very involved in the family business and leads a busy life. Her social life circles around colleagues at work and spending time with her grandchildren. She knows little about Masa's daily life and ambitions.

Harumi. Harumi is Masa's girlfriend. They attend the same university and met in the university's windsurfing club. Harumi is one year younger than Masa and has currently taken one semester off to study English in London. Her experience in London has been disappointing. Wanting to get away from everything Japanese and immerse herself in British culture, she has found herself in an English school that serves foreign students—primarily Japanese. She and Masa have been together a year and a half and their relationship is still tied to windsurfing. She has plans to pursue a career in publishing for a women's fashion magazine in Tokyo.

KEY INFORMANT—SACHIKO

Sachiko is 21 years old. Her parents and younger sister are living in California, and Sachiko has been

living alone in the family home in Tokyo for the past two years. The family lived in Michigan, where Sachiko spent 3rd through 7th grade in an American school. She spent the rest of her junior high school and high school years in her Japanese hometown, and has now completed her junior year at university, studying English literature. Rather than completing her senior year, she has decided to take a year off from school in order to allow more time for reflection about what she wants to do, and try some other educational programs. Sachiko has been active in the university windsurfing circle, but retired when she completed her junior year. Besides her family, the important people in her network are her boyfriend, an American teacher at her school, and a couple of girl friends from university.

Nodal Interviews

Masamitsu. Masamitsu is Sachiko's boyfriend. They have been together for about a year and a half. They attend the same university but have different majors (he is studying economics). Masamitsu spent a couple of years working at temporary jobs before getting into university. His main interest is punk music, and he brings several parts of his network together to go to punk concerts and clubs.

Eri. Eri is Sachiko's younger sister. She is in her senior year in high school, and has been living with their parents in California for two years. She hangs out with Japanese and Asian friends, and does not mention any non-Asian friends in her network. About 50% of the students at her high school are of Asian ancestry. She enjoys shopping and karaoke. She studies hard because hopes to attend a Japanese university.

Kazuko. Kazuko is Sachiko's mother. During their two years living in California, her network has grown from being dependent on Eri's school friends and their families to including many Japanese women across the San Francisco Bay Area. She has

joined a cultural association and advanced to a high position, giving her many challenges. She is also an active Buddhist and attends a local temple for Buddhist studies. Buddhism connects Sachiko and her mother.

Naomi. Naomi is one of Sachiko's best friends from university. She is not a member of the windsurfing circle, but knows several friends from the circle. Naomi spent part of her childhood in the United States and felt like an outsider when she came back to Japan in 8th grade. She still is in close contact with friends from the United States via AOL chat. She is now in her senior year with the same major as Sachiko and has already been accepted for a job after graduation. She used to work for the GAP but recently quit to focus on her studies.

KEY INFORMANT—NAOKO

Naoko is 19 years old and has lived with her family in Yokohama since the 5th grade. When she was between 5 and 7 years old, the family lived in Connecticut in the United States. She also spent the second year of high school as an exchange student in Canada. Her Japanese high school was a private girls school, which also welcomed foreign students. Last year, she began her university education with a major in economics, and must commute 2.5 hours to the university campus outside Tokyo each day. She often meets with her sister, her sister's boyfriend, and their friends. Her most intense network cluster right now is the university windsurfing circle. Having learned much during her freshman year, she now is very keen on the sport and trains several times a week. She has a group of about 15 high school girl friends, with whom she stays in touch and meets regularly. To Naoko, this group is a big source of inspiration, since they all have chosen different directions in their lives.

Nodal Interviews

Yoshi. Yoshi is one of Naoko's university and windsurfing friends. Since Yoshi's family lives far away from the university, they have rented him a small apartment close to the campus outside Tokyo where students spend their first two years. Here, students spend a lot of time after school in each other's apartments drinking tea, playing games, and chatting. Yoshi's social circles revolve around studies and windsurfing.

Ayako. At 23, Ayako is Naoko's older sister. The sisters are very close—they share a room in the family home and chat with each other for hours almost every night. Ayako has studied and traveled abroad for longer periods. She has been accepted to start working with a large American investment firm next year, and is now finishing her studies and enjoying the time with her family. Ayako is concerned about the future and spends a lot of time thinking of and discussing work, family, and getting older with her friends.

Hiroshi. Hiroshi is one of Naoko's university friends, majoring in physics. Hiroshi's passions in life are R&B music and surfing. The windsurfing and surfing circle tables are next to each other in the university restaurant, and that's how they became friends. Hiroshi sings and has created his own one-man band. He is creating a music network.

Ai. Ai is one of Naoko's high school friends. She attends a two-year college and majors in English. Like Naoko, her group of high school friends is important to her for inspiration and sharing experiences. She also has a crowd of friends from college through whom she can access restaurants and bars and hang out in downtown Tokyo. Her dream is to become a flight attendant, and she chose the two-year college because it has a flight attendant program. She just began working part-time for the GAP.

KEY INFORMANT—NAOMI

Naomi is a 27-year old Japanese woman living in Tokyo and fluent in Japanese and English. She was born in Japan, moved to England when she was 3, came back to Japan for primary school, and then moved with her family again, this time to New York where she stayed one year. She also went to the equivalent of junior college in Wales for two years before returning to Japan to attend Tokyo University, where she majored in sociology and graduated with an equivalent of a Master's degree. After college, Naomi joined a major Japanese advertising firm where she is involved in lifestyle and consumer research. She lives with her parents and sister in the center of Tokyo, and she has an older brother. Naomi's father heads a trading company and is semi-retired.

Nodal Interviews

Mr. Akira. Mr. Akira is Naomi's father. He has had a long, successful career in the trading business and is now slowing down to enjoy golfing, sailing, and socializing with family and friends. His network includes active alumni communities of both high school and university friends. Both Akira and Naomi have very busy schedules and only meet occasionally on the weekend and sometimes for dinner during the week.

Mr. Masumoto. About 40, Mr. Masumoto is a specialist in computer games and founder of the Financial IQ community, of which Naomi is a member. Masumoto has an extensive network with clusters based on video games, visual arts, poetry, media, and financial investments.

Mr. Ouchi. Mr. Ouchi is a colleague of Naomi's. Ouchi, who is in his 50s, has a rich professional network with designers and anthropologists outside the company and has introduced Naomi to many of

them. He appreciates Naomi's energy, social skills, and proficiency in English.

Masako. Masako is a friend of Naomi's from the college in Wales. They have stayed in touch since they were 16, and Naomi sees Masako as one of her best friends. Masako has a degree in art from a university in Scotland. She maintains strong relations with friends abroad. Masako lives in downtown Tokyo with her boyfriend and is working as a production assistant at a non-fiction film production company.

