

**DESIGNING PRODUCTIVE SPACES FOR MOBILE WORKERS:
*ROLE INSIGHTS FROM NETWORK ANALYSIS***

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Abstract

Workspace design has not been keeping up with the evolving needs of mobile workers. Although the economic benefits of mobile work have been expanding for companies, few companies have mobile worker strategies or seriously address how new ways of working require different kinds of physical space, mobile devices, and office equipment. Popular mobile worker “myths” about the work they do, what they need when they are in the office, and even gender and age have led to costly mistakes in office design and installations. A 2006 study used value network analysis and surveyed mobile workers to define the roles mobile workers play and to map the ways they interact with others. The insights gained from this approach are helping workplace designers, technology providers, and real estate managers better meet the real needs of workers and use resources more effectively.

DESIGNING PRODUCTIVE SPACES FOR MOBILE WORKERS: ROLE INSIGHTS FROM NETWORK ANALYSIS

Over the past decade, the number of workers who spend a significant portion of their time away from traditional assigned office space has substantially increased. Many workers today conduct their work day “on the road,” from hotel rooms and client offices, or from places within their facility other than their assigned desk. This is now referred to as *virtual work* or *mobile work*. In some contexts, mobile work is more narrowly defined as work conducted through the use of mobile devices. However, mobile technologies are only some of the enablers of mobile work. Equally important is the physical environment that supports the use of mobile technologies, although this has received considerably less attention in the literature about mobile work. Workers often engage in flexible work arrangements as they juggle demands from life responsibilities that force adjustments to work hours or work schedules. Therefore, it is important to consider the type of work people do because, as this study demonstrates, different roles require different kinds of supporting technologies.

A recent benchmark study from Nemertes Research (2007) revealed that a staggering 83% of organizations now consider themselves to be virtual, with workgroups spread across multiple locations and geographies. Fully 91% of company employees do some work outside of traditional headquarter locations, and 96% use some form of real-time collaboration tools (e.g., instant messaging, Web conferencing, audio/video conferencing).

MOBILE WORKER NEEDS RARELY ARE WELL ADDRESSED

These new work practices, once regarded as alternatives, are now viewed as ways to save money, access required skill sets, and increase productivity (Conlin, 2006). The economic benefits of mobile work and mobility resources have been well established in recent studies, such as the BOSTI study (Brill et al., 2001); the Hudson Institute workforce study (Johnston & Packer, 1987); studies by the Center for Workplace Preparation (Healy, 2004); the workforce agility study (Beatty & Saratoga/PricewaterhouseCoopers, 2005); and the study by Knoll Workforce Research (2005). Yet, at the same time, companies have been cutting budgets (if they even have one for mobile work) and other support (Sellers & Thomas, 2007). Mobile workers feel marginalized not only when they do not have the best mobile devices for their needs, but also when they come into the traditional office and feel isolated or unsupported in the way they are assigned space and equipment. Many mobile workers have expressed disenchantment with the value of their company’s primary workplace and stated that their corporate office architecture is unproductive, underutilized, and misaligned with the needs of the evolving workforce (Chan et al., 2007; Grantham et al., 2007).

The Nemertes study (2007) found that only 43% of global organizations had a mobility strategy and another 26% currently were developing one. Among US-based companies, only 35% had a strategy, and another 16% had one in development; thus, almost half of US enterprises had no organization-wide strategy for supporting the needs of the mobile workforce. Even more telling, only 15% of all organizations interviewed had a specific mobility budget.

Little is known about how the shift to greater mobility and the associated changes in workspace and technology usage are affecting diverse roles, work activities, interpersonal collaboration, and worker satisfaction. The crucial issue facing organizations moving to mobile work arrangements is to understand how the various types of mobile workers communicate, both socially and professionally. It is no longer enough to provide a one-size-fits-all package for mobile devices, equipment, and workspaces. Workers have become more discerning about exactly what they need to support their work and are frustrated when their unique needs are not met.

UNASSIGNED SPACE DOES NOT WORK

For Knoll's (2005) study of flexible and mobile work strategies, in-depth field interviews were conducted with real estate and human resource decision makers within five Global 100 companies representing five different industries. This was a qualitative study from the organizational or leadership perspective. The findings revealed that, after companies conducted workspace usage analyses and realized a large percentage of workstations were vacant, a common solution was to create unassigned space for a percentage of the workplace or a portion of the company's real estate portfolio. Real metrics were produced and real dollars saved in terms of space management. However, management also acknowledged that achieving projected value from mobile worker programs had been elusive.

Many managers executing unassigned workspace strategies encountered obstacles and resistance. Workers felt marginalized, especially because they would be in undesirable seating areas, which were sometimes completely separate from the work group to which they belonged. A question remained: Why has the unassigned space strategy had such minimal success in supporting new work patterns and mobile work? This question begged for investigation into the drivers and influencers, not only of the mobile strategists and workspace designers, but of the workers themselves.

COLLABORATION AND HUMAN NETWORKS

In 2006, Knoll undertook a study that focused on the ways mobile workers actually work. The present study was quantitative study nature and was conducted from the employees', rather than management's, perspective. The starting point involved considering the different ways people might interact with each other, knowing that collaboration is an increasingly vital feature of business life. Particularly in knowledge-intensive work, creating an informational environment that helps employees solve increasingly complex and often ambiguous problems holds significant performance implications. But when companies promote collaboration indiscriminately, without the right kinds of support, bottlenecks are created that diminish organizational effectiveness.

Usually, when considering where people turn for information or knowledge, the logical sources are databases; the Web; intranets and portals; and other, more traditional repositories (e.g., file cabinets, policy and procedure manuals). However, research has shown that a significant component of one's information environment consists of the relationships that person can tap for various informational needs. For example, a study conducted by Allen and Henn at the Massachusetts Institute of Technology (2006) found that engineers and scientists were roughly five times more likely to turn to a person for information than to an impersonal source, such as a database or a file cabinet.

Interest in understanding human networks and in applying classic network analysis techniques to organizational issues has been increasing in recent years. Universities and the private sector are looking more deeply into these ideas. The University of Virginia Network Round Table, for example, has involved more than 40 large companies in learning about the latest developments in organizational network analysis (Cross & Parker, 2004). The technology and methodology is easy to use because algorithms and virtually free applications exist. These tools enable one to see the informal knowledge sharing networks and communication links that complement the formal organization. A similar approach could be very useful in understanding the key roles, relationships, and interactions of mobile workers.

RESEARCH APPROACH

The present study was conducted on the premise that mobile workers depend upon a web of relationships (i.e., a network) to fulfill their tasks. Workers seek to be effective in the different purposeful value creating networks to which they belong. A *value network* is any web of relationships that generates economic or social value through complex, dynamic exchanges of both tangible and intangible benefit. Value networks operate both internally across the organization and also extend externally to partners, stakeholders, and the industry (Allee, 2003). This perspective of how organizations work has been growing in management awareness since the late 1990s, not only in the United States but in Europe and other countries, as well (Normann & Ramirez, 1993; Christensen, 1997; Stabell & Fjellstad, 1998; Allee, 2000; Tapscott et al., 2000).

Value Network Analysis

Value network analysis (Allee, 2003) attempts to determine the value of interactions between people in a network. It is a lens through which to explore the otherwise hidden relationships, processes, and deliverables that underpin high-performing workgroups. People who play roles in a network take the assets they control and convert them into negotiable forms of value, which can be extended or offered to others in the network. Value network analysis, therefore, examines (a) the actual value-adding roles people play and (b) the specific value deliverables they convey to others. Value is considered in both tangible (contractual) and intangible (informal) terms.

- *Tangible value* is generated through contracted or mandated activities that contribute directly to economic gain or expected services. Tangible value is generated in the type of activities tracked in a value chain or in business processes (e.g., six sigma, LEAN).
- *Intangible value* normally lies concealed. It includes the value generated by informal, non-mandated activities that help deepen business relationships and contribute directly to operational effectiveness. Through this lens, the mission-critical support that builds relationships and keeps things running smoothly becomes apparent.

Other mobile worker surveys have focused solely on outputs and formal reporting relationships and on uses of technology, rather than on value creation or professional interaction (Becker et al., 1995; Becker et al., 1997; Deloitte, 2005; Booz Allen Hamilton & INSEAD, 2006). In contrast, the perspective of value network analysis (Allee, 2003) was selected as the key tool with which to define the roles and relationships of mobile workers in this study. This type of analysis

gives executives the information they need to foster collaboration at critical junctures, and to tap the talents and expertise of mobile workers more effectively.

Specifically, the fresh perspective of value network analysis introduced several important elements into the design of this study:

- This research looked at the relationships and roles of mobile workers, not just their functions or tasks.
- It assumed a strategic view of mobile workers as a cornerstone for the increasingly agile, globally networked organizations that are becoming the norm in every industry.
- This approach made it possible to expose critical working relationships, environmental conditions, infrastructure, and motivators.
- Finally, it made possible conclusions about how to best support mobile workers, based on understanding how such workers interact, communicate, and collaborate, as well as exactly how they use space, technology, and collaborative tools.

This awareness of the importance of connectivity and intangibles also surfaced in the study during the interviews. For example, Joel Ratekin from the Corporate Real Estate group at Capital One told us, “Who you know determines what you know. Before moving a group into a mobile program, we need to find out how connected they are. We have plenty of tools to measure the tangibles, but if a work group becomes mobile and we fail to understand the intangibles involved, these could erode without us knowing until it’s too late.”

Survey Methods

A total of 557 respondents participated in this survey. They came from 84 different organizations. Of the total, 246 respondents came from large multinational companies, and 311 respondents came from mixed companies.

The survey instrument was designed with value network analysis questions that focused on the type of value being created, the level of value as perceived by the worker, and the type of value output generated. The question set included respondents’ background information; roles; technology use; space needs and work habits, especially as related to working with others; and general feelings about being a mobile worker.

The survey asked respondents not only to define their own roles, but also to describe the roles with which they interacted and how they believed their value was perceived by others. Respondents made their choices from a drop-down list of 28 roles, which were compiled from common management taxonomies (Table 1). These questions about roles allowed for a finer level of granularity in the way respondents described their work and business relationships. The instrument also provided a way to discover whether different roles carried the same technology requirements, after the data had shown this was an important question to address.

Table 1: Role choices for respondents*

Administrator	Developer	Partner
Advisor	Evaluator	Problem solver
Buyer	Influencer	Producer
Client	Innovator	Regulator
Competitor	Investigator	Researcher
Comptroller	Leader	Seller
Contractor	Marketer	Service provider
Coordinator	Mentor	Subject matter expert
Designer	Other expert	Trouble shooter

*listed in alphabetical order

RESULTS: MYTH BUSTERS

This study found that a number of commonly held myths about mobile workers, if ever true, were simply not supported by the findings. The following are the most compelling and significant assumptions debunked by the study.

Assumptions about Age and Gender

There has been a common assumption that mobile workers are either female or young technology workers and that they are performing individual, low-skill-based work tasks (Coplan, 2000; Naylor, 2006). In fact, the study provided a high level of consistency in answering the question, who is the mobile worker? The male-to-female ratio was 65/35, and the majority of respondents characterized themselves as follows:

- Mature: 65% were older than 40
- Family-oriented: 82% were married or living with a partner
- Hardworking: 75% worked more than 40 hours per week

Assumptions about Roles and Professional Stature

Traditionally, it has been assumed that only specialist workers (e.g., salespeople, auditors, consultants) spend significant periods away from the office (Andriessen & Vartiainen, 2005). However, the present study found that all levels of staff worked outside the office. In fact, most of the mobile workers surveyed occupied professional, managerial, or executive positions. Almost half (48.6%) of the workers perceived themselves as occupying leadership roles; the breakdown of their most common responses was as follows:

- Leaders (13.3%)

- Consultants (13.1%)
- Problem solvers (8.2%)
- Coordinators (7.5%)
- Subject-matter experts (6.5%)

Not only were these mobile workers higher level professionals than most people might have assumed, but they were working on specific issues with clients as active consultants and problem solvers, rather than in service support or sales roles.

These mobile workers were serious, career-oriented employees: 67% were employed in an organization with a formal mobile work program and had long-term employment at their company. As many as 30% had been employed for 6 to 10 years, and more than 20% had spent 16 to 20 years or longer at their organization.

Assumptions about the Need for a Productive Workspace

There has been a tendency to think that mobile workers are constantly on the move, either in a car or on an airplane (O'Hara et al., 2001; Gogoi, 2005). However, this study found that only some mobile workers are really mobile; a great many actually can be found in the same location on a daily basis. The primary difference is that their location is a home office rather than a traditional workplace.

Many mobile workers feel they do their best work at home. More than 60% of survey respondents reported being most productive at home, with as much as two-thirds of their home work time spent on individual or independent work. They also indicated they found other places, sometimes outside the office, to be more productive when something really needs to get done. They also expressed that the office was usually not well conceived regarding the new roles it is increasingly being asked to fulfill. Increasingly, respondents indicated, people are using restaurants and coffee cafes to meet with others.

Mobile workers expressed the need for team space; 75% of the respondents said they come into the office for face-to-face meetings. Survey comments validated the experience that team rooms are sorely missing and often architecturally not enabled. A disparity exists between needed work settings and the types of spaces provided to mobile workers. More than 50% of the mobile workers surveyed stated they really need conference room space at their employer's office, but are having trouble getting it. Less than 5% of respondents had assigned collaborative space. The survey results revealed that mobile worker profiles vary with respect to office infrastructure and technology needs, but show the same requirements for meeting space.

Assumptions about Technology Needs

There also has been an assumption that the basic functionality of mobile devices and the mix of technologies needed are very similar for all mobile workers (Koch & Caldwell, 1999; Fay, 2003). However, aside from the "big three" (i.e., laptop, interpersonal communication, and cell phone), this study revealed very different technology needs among the respondents, based on the varied roles mobile workers play.

Collaborative technology is a must-have for mobile workers: 90% of mobile workers in this survey said they need mobile teleconferencing and collaborative technology capabilities. In general, being mobile means a heavy reliance on technology for achieving peak performance, for feeling organized, and for meeting personal necessities. Not surprisingly, all respondents described their top three needs for mobile devices as (a) a laptop and docking station; (b) instant messaging, voice mail, and e-mail, and (c) cell phone (Figures 1a and 1b). However, simply having these devices did not prevent most workers from feeling a disconnect between what was provided to them (or allowed for in their budget) and what they really need to be productive.

[Figure 1a: The top mobile technology needs of respondents from a mix of industries](#)

[Figure 1b: The top mobile technology needs of respondents from large multi-nationals](#)

ROLE IMPLICATIONS FOR WORKSPACE AND FURNITURE DESIGNERS

The data collected for this study made it possible to profile the three most common leadership roles assumed by mobile workers (i.e., problem solvers, consultants, and leaders) in terms of their work habits, technology needs, and workspace requirements. For example, the survey responses suggested that a problem solver has a much richer and more stable environment than a consultant, although the consultant has a more focused value network and tends to work in a variety of settings.

The pattern of interactions between individuals with various roles is as interesting as the roles themselves. Figure 2 shows the typical interactions problem solvers, consultants, and leaders have with people in some of the other most common roles.

[Figure 2: Typical frequency of interactions between roles](#)

This study suggests that technology and workspace designers need to pay more attention to the idea that a role drives behavior, and therefore also determines the kind of support required to work effectively. For example, if two people hold the same job title but perceive their roles differently, they are likely to end up doing different things during the course of the day. Thus, the environment needs to be different for both to be productive in their respective ways.

Companies tend to have set packages of technology and equipment that are available for mobile workers, but these may not meet the need to support multiple roles. Recognizing that the typical mobile worker is an older professional is one clue that these workers are not all alike and that their needs can be very different. However, this study found the key differentiator for what technologies and workspaces a mobile worker requires is not age; rather, it is entirely a matter of the worker's role.

The three sections that follow discuss the role profiles of problem solvers, consultants, and leaders. Data from this study is presented and recommendations for technology and workspace designers are given. The role characteristics for each group, as well as the home and office needs associated with its roles, are summarized in Table 2.

Table 2: Roles and needs of problem solvers, consultants, and leaders

	Role characteristics	Home needs	Office needs
Problem solver	<ul style="list-style-type: none"> • Multiple issues at once • Many single interactions • Paper and filing: “keeping things straight” • Use of reference material • Predominately working at home 	<ul style="list-style-type: none"> • Bookcase • Computer and Internet • Mailing service • Professional copying • Office-like seating • Remote printing 	<ul style="list-style-type: none"> • Printing/faxing • Mailing service • Professional copying • Space for individual interactions • Collaboration on the fly • Day care
Consultant	<ul style="list-style-type: none"> • Small number of projects • Fewest number of contact points • Communications with clients and leaders • “Road warrior” 	<ul style="list-style-type: none"> • Smart phone • Video conferencing • Remote printing 	<ul style="list-style-type: none"> • Space to display or present to small groups and individual team meetings & updates • Booths • Concierge
Leader	<ul style="list-style-type: none"> • Many frequent interactions • Immediacy • Speed/convenience • Confidentiality 	<ul style="list-style-type: none"> • Immediate access • Directories • Concierge • Representative space • Transportation 	<ul style="list-style-type: none"> • Formal conferencing • “Iconic”/branded spaces • Group settings • Confidential • Dry cleaning • Day care • Concierge/dining

Problem Solvers

According to the survey, the vast majority of problem solvers were home based. These problem solvers typically had many single contacts a day. They resolved a spot issue, then moved on to the next task. In this way, they handled multiple issues at once, but engaged in single interactions. Primarily, they were involved in transferring expertise. One unique quality of the problem solvers is that they had a high requirement for paper and filing. They worked with multiple people at once and had to remember relevant information about these individuals. Because this information often resided in a binder or book or manual, the problem solvers needed reference materials close at hand.

At Home

Technology and workspace designers should keep in mind that problem solvers need a regular office at home that is set up for doing computer work and accessing reference material. They need an ergonomic chair, a desk, a bookcase, a computer, and paper storage and filing spaces. Other needs that emerged from the survey data are access to offsite printing and postal services, and a high quality Internet link of some kind. In essence, problem solvers' home needs are very similar to their office needs.

At the Office

When problem solvers visit their offices, they do the same thing they did from home; that is, they have many single contacts to solve single problems. They meet with people about specifics and also engage in printing and faxing. They often find they have a great deal of time between meetings, and may find themselves asking, "What will I do with this time?" Some elements can be provided at the office to help problem solvers achieve a greater life/work balance. Daycare is one example; if the person is on the road or at the office for a long period of time, but normally works from home, he or she may need childcare support at home or the office.

Consultants

A consultant has a very different profile from that of a problem solver. The data from this study showed that consultants had the lowest number of contact points but the highest frequency of interactions; thus, they were engaged with a small group of people several times a day. Additionally, the people with whom they talked were not necessarily people internal to the team or company, but rather clients or leaders. So, compared with problem solvers, consultants were much more physically mobile. Like road warriors, the consultants went from site to site or city to city, supporting small groups of people. They were also project focused. Projects have a finite time, so they worked with small teams and had a high degree of interactions.

At Home

It is important for technology and workspace designers to realize that consultants have relatively less concern about furniture and more concern about their technology budget. Compared with the other roles examined in this study, consultants expressed the greatest need for mobile devices: cell phone, laptops, smart phones, and teleconference and video conference capability. They did not mention many specific needs for furniture.

At the Office

When consultants come into the office, their foremost needs are to display and present; therefore, they should have display boards, big screens, and meeting or presentation rooms. Typically, they work with small groups or individuals, not large gatherings. So, for example, when they meet to update team members, they need a booth or small conference room.

Leaders

The leaders in this study fell in the middle between the problem solvers, who had many single interactions, and the consultants, who had few but frequent contacts. So, if a problem solver had 25 contact points and a consultant had 5, the leader had 10. These interactions were numerous and frequent, which required a steady flow of information. Therefore, immediacy, speed, convenience, and confidentiality are important to the leaders.

At Home

Technology and workspace designers need to recognize that leaders are most concerned about services and about having immediate access to the people with whom they work. At home, they need a representative space where people can come to visit; this is not necessarily the home office, but rather a professionally presentable place within the home. In addition, leaders need such services as concierge, travel and transportation, and a way to hold meetings that are private or confidential. For them, having secure technologies is an important concern.

At the Office

For the office, leaders expressed the need for formal, iconic conferencing spaces that are representative of the culture of the company. They need both a large, public group setting and the ability to go from that space to an adjacent one that is much more confidential. Balancing the life/work equation is important to leaders, so they need access to dry cleaning, daycare, concierge, and dining. Technologies that are most helpful to leaders are those that help manage contacts and schedules, rather than large amounts of documentation.

CHALLENGES FOR THE OFFICE LANDSCAPE

To rationalize their property portfolios, property and facility managers are under pressure either to make better use of existing resources to free up space or to grow without taking on any more space. However, many are not adjusting the office footprint to meet the needs of workers. A Silicon Valley consultant reported that when she visits large companies, many offices have a central “dead zone” with empty cubicles, while the few meeting rooms around the edges are overbooked. Many company cafeterias have become ad hoc meeting spaces because rooms are not available.

Another issue is the reluctance on the part of property managers to let go of floor space “just in case” it is needed. One survey respondent reported, “My company is not providing enough support for mobile workers. Although the mobile work program is supported on a corporate level, our site manager isn’t bright enough to use it to effectively reduce our office footprint, so he’s stuck with the bill for the full footprint *and* reimbursement for home expenses.”

What can be done? To begin with, plan on allocating a portion of the real estate saving dollars and reinvest in a realistic mobile worker budget that addresses diverse technology and equipment needs. Respondents in this study asked for layers of hyperconnectivity. When asked why he did not need an assigned workstation, one respondent replied, “Equipment doesn’t care where it’s located. We can be connected through technology.” Therefore, determine a real estate strategy that serves the work being done and accommodates the need for different work settings, along with saving space.

Consider Shared Office Space

The idea of slashing costs by sharing office infrastructure has been around since the 1980s, but sharing office space also carries the stigma of not being a “real” worker. Today, wireless and economic globalization has given companies more options that do not entail workers being tied down to long-term office leases, and shared office space strategies are becoming outmoded by technology. In total, the Office Business Center Association International estimated that 4,000 shared office business centers exist throughout North America and 5,500 around the globe (Office Business Central, 2007).

Reconsider the Mix of Work Settings Being Offered

Plan a more holistic view that goes beyond corporate guidelines and standards. Consider the linkage between the workplace and a particular engagement. Begin by determining the time spent within the organization in team or group work and the time spent in individual work (Evans & Wolf, 2005). Then assess the need for different types of work settings required for different roles, and create welcoming places where people want to be.

RETHINKING SPACE DESIGN

Based on the results of this survey, organizations should consider undertaking a thorough review of their typical space profile and consider reassigning space in greater alignment with the needs and expectations of an increasingly mobile population. Based on respondents’ answers to the survey, suggestions are outlined for creating an accommodating and effective workplace.

1. Address requirements of older and younger mobile workers for greater effectiveness at their workplace and home:

- Mobility resonates particularly with older workers. Those who want to extend the number of years they remain in the workforce find traditional workplace policies inadequate for working at home. They feel the standard provisions (e.g., inflexible work hours, workspace as entitlement, commuting to one location, treating employees as costs) inhibit their effectiveness.
- Younger mobile workers view mobile work as directly correlated with improved quality of life, which allows for greater flexibility with their time.
- Mobility is a solution to increase productivity when employees are faced with temporary health issues or health restrictions related to aging and disability (Hedge et al., 2006).

2. Provide corporate workspaces that allow for mobility of work and mobility of the workplace, not only the mobility of people. Workplaces must be highly portable, with the necessary technology, equipment, and support tools.

- Enable mobile workers to work where and when they like, at any hour or day of the year; manage people by objectives rather than by their presence
- Allow work to be carried out collaboratively, at any time and any place
- Be more context aware; enable workers to switch easily between collaborative work settings and individual, task-focused activities
- Have plug-and-play capability available; primary workplace and home locations need high-quality workspaces with technology access for collaboration and virtual conferencing
- Facilities operators should seek priority agreements with service providers for services at other locations, including residences

3. Provide work environments and service centers in addition to workstations, including the following:

- Spaces free from interruption (this is both a cultural and design issue)
- Informal areas where people can meet and engage with each other
- Back-office services that facilitate copying, printing, and mailing
- Team communication centers, both physical and virtual
- Learning and development activities to identify and support people playing key roles in improving knowledge networks
- Non-traditional areas for “hanging out” or informal meetings (e.g., booths near coffee bars)
- Concierge support services, dining areas and gaming areas
- Wireless and teleconference capability; new technology for video conferencing
- Private space/studios (i.e., not private offices), including some with homelike environments

A Final Word on Technology

Providers of mobile devices and technologies can easily fall into the trap of designing for stereotypes of mobile workers instead of looking at the real users of mobile technologies. It is not sufficient to just observe how people physically interact with a device when addressing design; the context of the work itself must be considered. Older workers are just as at home with mobile technologies as are younger users, although the needs of the former may be quite different because their roles are different. Technology package providers and designers need to take this into account.

CONCLUSIONS

Mobile worker programs must provide resources for the primary role an individual is assuming, which is not that of mobile worker. When mobile workers can concentrate on assuming their primary roles, their performance is highest. The formal organization is actually a resourcing model to support key roles in identified work activities and value networks that “float” between the lines of the organizational chart. But this cannot be done without a clear mobile worker strategy and a budget to implement it.

Mobile workers need productive workspaces at home, as well as places to meet in the office setting. Different roles require different types of technology, workspace design, meeting spaces, and services. Equipment and workspaces must fit unique needs in terms of supplies; technical support and training; places to send mail; and places to meet and socialize with colleagues, customers, and clients. Social or organizational network analysis can be used to help to improve knowledge flows, and to locate expertise by focusing on individual communication flows. Value network analysis can help people better support key roles and better organize projects and activities that cross internal and external organizational boundaries. Evaluating mobile worker roles creates new business opportunities for infrastructure and technology providers and transforms the provisions of space and services.

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Figure 1a

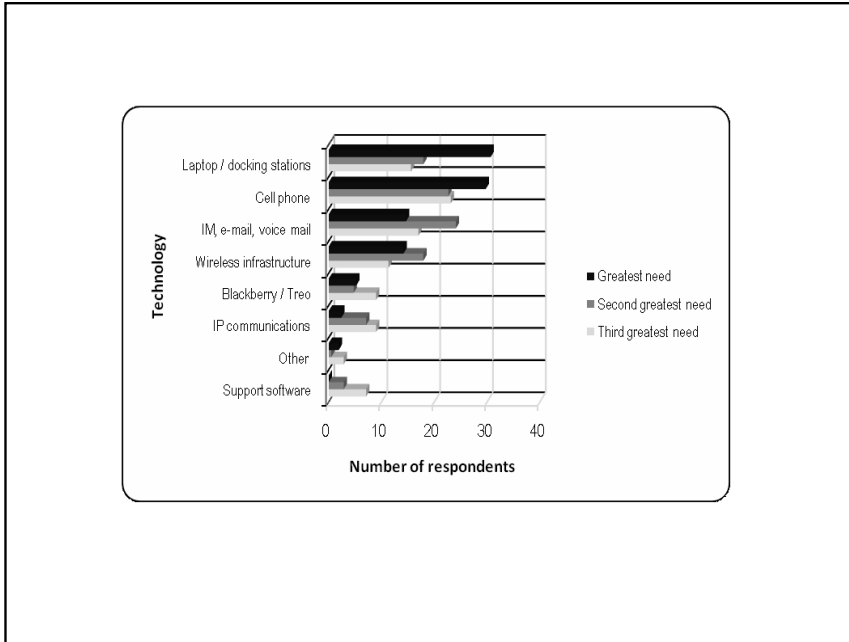


Figure 1a: The top mobile technology needs of respondents from a mix of industries

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Figure 1b

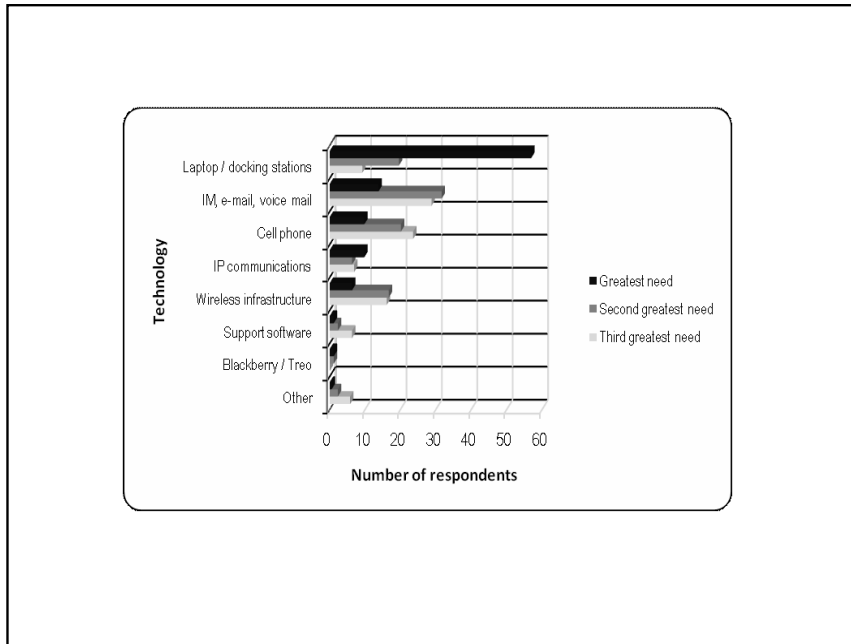


Figure 1b: The top mobile technology needs of respondents from large multinationals

Contact author: Camille Venezia

Figure 3

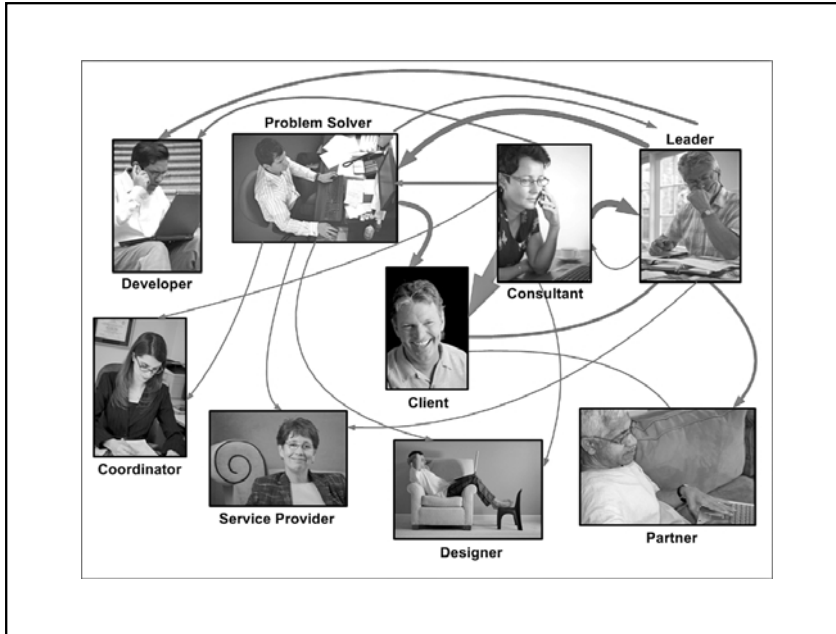


Figure 2: Typical frequency of interactions between roles
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