

Workers as a Service

The End of Employers?

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Abstract: Imagine a world with no employers; only people buying and selling their labor and skills in an open market; a world with no unemployment, where people have more control over their work-life balance. Is this a better world? Is this a world design researchers should try and bring into existence?

We initiated a *research through design* project to investigate the future of work with the intention of revealing opportunities for new communication products and services. At the time, the effects of the 2008 banking crisis could still be felt; particularly the high unemployment rates. During the course of our inquiry, we began to view the challenge of unemployment as an unhealthy dependency workers have on employers. To better understand the benefits and risks associated with leaving paid employment, we conducted a field study on micro-service providers. We focused on understanding their work practices, the quality of their work experiences, and their rationale for engaging in this kind of work. We discovered that people participating in this type are willing to trade stability for a sense of control, and that they are much better and getting and doing work than they are at running a business. In reflecting on our findings, we note an opportunity for new services and marketplaces that could reduce the uncertainty involved in engaging in this type of work and that could provide more support for the many services needed to run a business. Providing these new markets and services could allow many more people to become micro-service providers and this would benefit the unemployed, people who need more control over work-life balance, and people who wish to stage a transition into retirement.

Key words: *Paper Template, Guides, instructions, author's kit, conference publications*

1. Introduction

Imagine a world with no employers; only people buying and selling their labor and skills in an open market; a world with no unemployment, where people have more control over work-life balance. Is this a better world? Is this a world design researchers should work to bring into existence?

We began a research through design [28,18] project, investigating the future of work with a focus on designing new communication products and services. This work began in late 2010, and the impact of the *2008 Banking Crisis* could still be felt in terms of high unemployment. A polarizing discourse revolved around this issue; with one side pushing for new government programs and projects to create employment and the other side pushing for

decreased regulation and lower taxes to spur job creation in the commercial sector. Neither side ever discussed “work” without an explicit link to an employer. Interestingly, over the first phase of this research project we increasingly began to see people’s dependency on employers as one of the root causes of unemployment and as a possible approach to address this challenge.

The development of information and communication technologies (ICTs) have had a profound impact on the way people work, making it easier for organizations and industries to grow larger and larger by reducing the frictions caused by time and place. The impact of this technology has been an important topic for research communities focused on organizational behavior and on computer supported cooperative work. During our review of recent ICT advances, we observed that current technology also makes it much easier for companies to get smaller by outsourcing many of their required functions. Taken a step further, new ICTs and new services in support of them seemed poised to support people in abandoning employment and becoming individual service providers. For example, web-hosting services allow new web companies to form without the need to purchase and maintain servers. New marketplaces ranging from Etsy [10], a sort of digital craft fair, to Apple’s App Store [3], make it easier to distribute and sell wares. Collaboration tools such as Basecamp [4] make it easy for freelancers to quickly form and dissolve opportunistic collaborations. Finally, crowdworker services such as Mechanical Turk [2] and TaskRabbit [25] provide entirely new ways for individuals to sell micro-units of their expertise and labor.

To investigate this potential trend, we conducted interviews with people working on the fringes, people who have already given up employment in order to become micro-service providers. We observed that they are happy to trade a sense of certainty for a greater feeling of control; that they need support tools and services in order to more effectively manage all of the non-production aspects of their small business, and that none of them are getting rich. In reflecting on our findings, we note that being a micro-service provider is difficult, but that it has many advantages over being unemployed. In addition, we note several design opportunities where design researchers and design practitioners can take actions that will lower the barriers of entry for people who might want to choose this path for their work.

This paper’s research contributions come from the fieldwork portion of a RtD case. They include insights on the life and practices of micro-service providers; insights on the service models these providers employ; and speculation on what design researcher and practitioners can do to lower the barriers for entry into this type of work.

2. Research Process

We began by holding weekly discussions on what the future of work might be. Prior to each session, team members would read articles from business and popular press, books detailing both past and contemporary visions of work, blog posts and industry articles on emerging technology and its potential impact, and business and political news on the financial crisis and its impact on work. During the discussions, team members would share observations and insights as we generated conceptual model that helped reveal historic and emerging trends as we worked to achieve a shared understanding of the worker landscape. Figure 1 shows a more fully realized image of one conceptual model that emerged from these discussions. This timeline helped expose the connections between ICTs, economic events, work practices, and visions of work. Through this ongoing process of reading, discussion,

and modeling, a focus on the employee-employer relationship began to emerge as well as new design opportunities based on changes in technology and the economics associated with technology.

2.1 Employee-employer relationship as problematic

When we began this project, the media carried many stories about the challenges faced by the US and Europe due to unemployment following the financial crisis of 2008. Unemployment in the US stood at approximately 9%. Europe’s unemployment stood at 10% with Spain leading the way with a rate of greater than 20% [26]. Turning our focus more to the near past, we discussed how the rise of telecommuting in the 1990s was followed by a growth in outsourcing in the 2000s. ICT advances, such as email, the web, broadband connections in home, and web interfaces to internal enterprise systems, created the possibility of telecommuting. This was a shining vision of the future where knowledge workers would better manage their work-life balance. However, this vision did not play out as envisioned. ICTs helped make some work placeless (the place where this work is done is not important). The increasing placelessness of the work then supported outsourcing, where overseas workers took on these tasks as much lower costs. In the US, the transition to outsourcing was accompanied by an increase in the use of contingency workers: part-time, contract, leased, seasonal, and temporary workers. Benefits of these types of work arrangements were meant to increase flexibility for both employers and employees. However, the US Department of Labor notes that the strongest driver for the increase was reduced costs [27].

Looking toward the future, we noted the impending retirement of babyboomers; the bump in babies born following the end of World War II. The press framed this as a looming economic crisis in terms of loss of experience, loss of labor, and a significant change in the ratio of workers to non-workers. We discussed how retirement can have a negative impact on the worker as they attempt to transition from working fulltime one day to never working again, including economic loss and an increase in mental health issues. Phased-retirement has

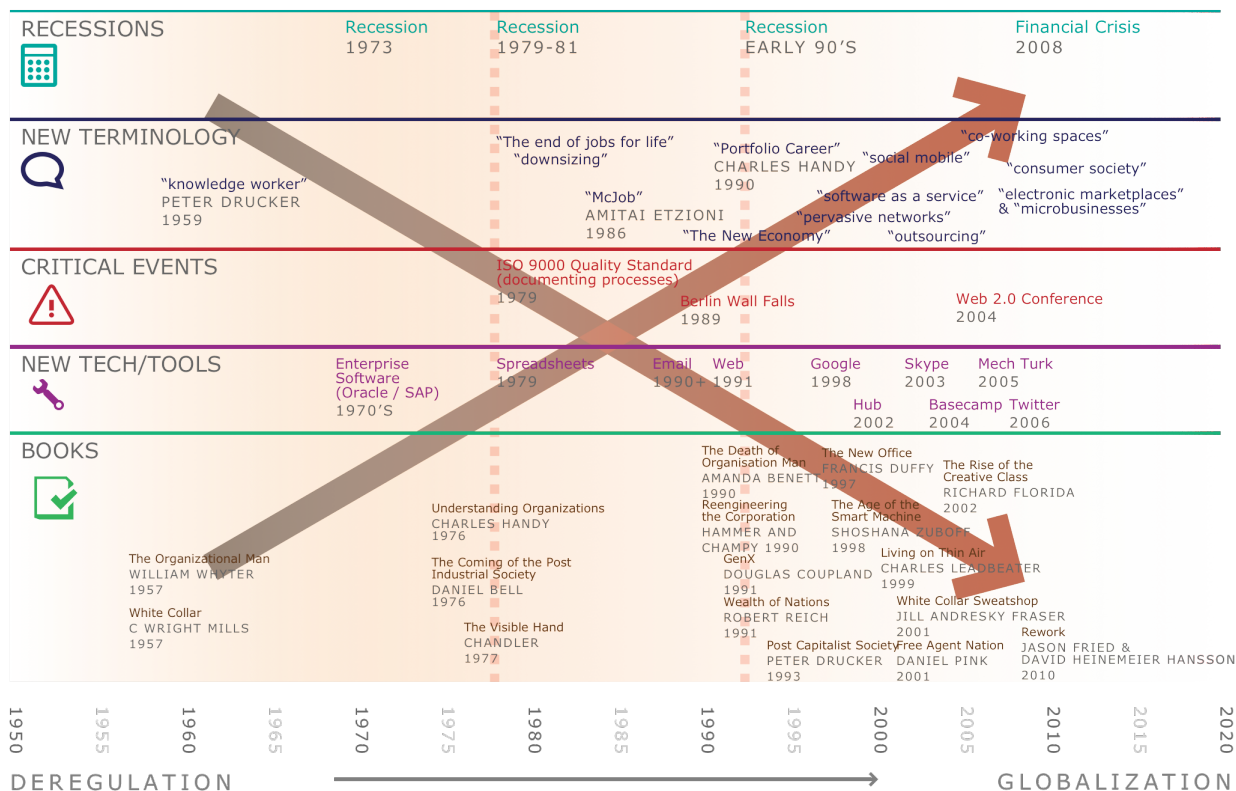


Figure 1. Timeline showing work-related, technology, and economic events, influential literature and trends

been proposed as a possible solution to the problem, but it is currently not an option for most workers. [22]

Finally, we noted the emergence of three new kinds of workplaces. The first was the rise of incubators: workplaces that collocate small, new companies, allowing them to share resources such as IT, printing, and administrative support. The second is the much more recent development of co-working spaces such as Hub Culture [13]. These new workplaces provide more of a place to go for people who are running solo practices and partnerships and often work at home. Co-working spaces provide services such as networking events, printing, desks, coffee, and the use of conference and meeting rooms. They bring together people who do not work for or with each other. In doing so they create the opportunity for social interaction and even opportunistic collaboration. The third was crowdwork [17] created by online marketplaces that allowed the buying and selling of work. These had the disturbing trend reducing what people get paid [17]. The 99designs [1] provides a great design example. This service provides its customers with 99 logo concepts for only \$299. The service crowdsources concepts from designers by creating a design contest, meaning only the designer who produces the winning concept gets paid. The system reduces the value of each design concept to the ridiculously low price of \$3.02.

2.2 Techno-economic

From a techno-economic perspective, there were three trends that strongly influenced our project framing. First, the strong growth of the service sector. Second, the emergence of Software as a Service (SaaS) was changing the economic model of software. Third, many new ICTs and supporting services decreased the effort and risk needed to start a small company or to become a micro-scale service provider.

Over the last several years there has been huge growth in the service sector, and today roughly 75% of UK and US workers work in this sector [21]. This transition motivated the creation of service design, a new practice distinct from product design and interaction design. Service designers focus on opportunities for the co-production of value between customers and service providers. This idea emerged along with the growth of the Internet, which allowed customers to connect with each other and with companies in new and interesting ways [23]. We chose to focus on services as an opportunity area because of its strong growth and because of its connection with outsourcing [15] due to the placelessness of some work.

SaaS represent a fundamental change to the economics of software [20]. Traditionally, software companies made products and then sold them to customers. Customers pay a fixed purchase price regardless of how much they use this product, and they pay for upgrades to access new versions. In contrast, SaaS customers sign up for a service and pay variable rates based on their use. Because most SaaS services are web-based, customers access the newest version every time they use the service, without incurring upgrade fees. This pay structure reduces the initial cost of adopting a software tool by spreading the cost out across time. In our discussions of SaaS, we talked about Gmail, Google Calendar, and Google Docs [12]; software product/services that are free to use. In addition, we noted services like Skype [24] that allow free long-distance voice and video communication and Dropbox [8], which allows free or low-cost file sharing. The emergence of this new economic model has had a disruptive influence on the software industry, creating the expectation that software should be free or nearly free to use.

Finally, we noted several new technology products and services that reduce the costs of starting a small-scale service. Web hosting services provided by many companies allow people to start web-based companies without raising the capital needed for servers and an IT support team. Mobile phone *apps* along with various marketplaces for these apps provide a free store, making the distribution of an app nearly free. In addition, apps have created

new conventions for tiny software products with very limited abilities that sell for 99 cents or less. Other new marketplaces to emerge in support of tiny industries include Etsy.com [10], which allows people making craft goods to easily operate an online store and Amazon's Mechanical Turk [2] service, which allows people to buy and sell micro-units of low-skilled labor. Finally, the emergence of social computing, including crowdsourcing services and social networking services, has reduce the effort and costs needed to finance, create, market and distribute new products or services. For example, Kickstarter allows people to crowdfund venture capital for small ventures, lowering the barrier to starting a company [16]. One social-media marketing example we particularly liked was the use of twitter by food trucks [5].

2.3 Framing

Based on these discussions and diagramming sessions, we chose to frame the breakdown caused by unemployment as a dependency people have on employers, as something an unemployed person cannot fix without placing an employer in their critical path. The reduced barriers to starting a new business pointed to a path forward, where people forgo traditional employment and become their own boss. As we played with this idea, we began to suggest a more radical change, a world without employers.

To investigate, we decided to take the extreme future vision of a world without employers as a critical lens for assessing the implications of making it easier for people to start and run their own business. As part of the process, we planned to detail the utopian and dystopian aspects at the point of the initial framing, bring this lens to the discussions of design directions, and bring it back again to assess our final solution. This idea of using a more extreme frame to drive design inquiry is not new. For example, IDEO's unfocus group method brings small groups of extreme users together and asks them to collaboratively design things, surfacing desires, tensions and design opportunities [14]. The extreme character method asks designers to make products for people like pimps or the Pope in order to inspire interaction aesthetics that can be lost when using a more pragmatic perspective [7]. Design researchers have suggested focusing on marginal practice communities, such as people that keep spiders as pets instead of the more traditional cat or dog, as a way of opening up a design space and advancing towards "grounded innovation" [19]. Finally, designers engaged in make provocative things intended to get people to critically re-understand their world [9]. Motivated by these earlier examples and approaches, our investigation applied an extreme lens to the preliminary framing and intended societal outcome that results from a design.

At the point of this initial framing, we noted on the utopian side that a world without employers would mean an end to unemployment, that it would give workers more control over their work-life balance, and that it would make it easier for people near retirement to plan their own staged-transition. On the dystopian side we noted the possibility of low wages. In addition, we noted that employers it would be harder to create complex products (i.e., cars and planes) and complex services (i.e., surgery). We could not imagine a sick person making the effort to find a surgeon, find an anesthesiologist, and find someone who owned and would rent a surgical suite.

3. Study of Micro-service Providers

To better understand what a future full of independent service providers might be like, we conducted semi-structured interviews with people already living this life; people working at the fringes of the more traditional worker-employer world. We specifically wanted to understand what types of work people currently do in this

space, how they get and perform the work, their lifestyle and its influence on them to perform this type of work, and any opportunities for new products or services that would encourage others to quit their employers.

We interviewed 13 participants (Table 1). Where possible, we interviewed participants in their workplace or in one of the many places where they work. However, our interview with P13 took place over the phone. We selected participants in a number of ways. Initially, we filtered participants based on their fit to our notion of someone who runs a micro-scale service. As recruiting and interviews began, we would then vet new participants against the set of people we had already interviewed in order to avoid interviewing people we viewed as too similar to current participants. In addition, we vetted them against our ever-evolving sense of what a non-employee/micro-scale service provider might be. Note that P8 is not a person, but instead represents a small group of people attending an administrative meeting on their timebanking service.

Our interviews focused on understanding the service offerings, including what it is, how it is performed, how the participant gets new work, how they manage the business (accounting, legal, strategic planning, etc.), and the role of ICT. We also probed on their decision to engage in this type of work. We synthesized our observations and

Table 1. Breakdown of participants

#	Title	Sex	Age	Description
P1	Doctor	M	40s	Runs a solo practice with no employees; no receptionist and no nurse. Business is entirely paperless and patients can schedule online.
P2	Journalist/ Blogger	M	60s	Formerly a high-ranking journalist at a big news corporation. Relocated for wife's job and turned to blogging, freelance video production, adjunct teaching, and semi-retirement
P3	Community Entrepreneur	M	30s	Developing a new type of workplace/incubator placed in low-income neighborhood. Focus on neighborhood revitalization through creative reuse and lower costs/risk for startups based on very short-term leases.
P4	Landlord/ Incubator	M	60s	Purchased building in transitional neighborhood. Works as landlord; curates tenants to create a viable and sustainable, incubator culture.
P5	Photo Entrepreneur, Web Designer	M	30s	Runs a solo web design practice. Created a web service where professionals use their downtime to critique novice the work of novices. Spends time to do the matchmaking between pros and novices. Our focus was the photo business.
P6	Career Entrepreneur	F	30s	Started a new company with partner focus on internet job searching. Their service investigates how internet job systems select resumes and then modifies customers' resumes to help them perform better in these searches.
P7	Digital Fabricator	M	20s	Provides small-scale digital fabrication including 3D printing. Also manages larger fabrication projects by outsourcing parts of the work to other fabrication facilities in personal network.
P8	Timebank			Church members who trade services for each other based on skills and time; example of trading childcare for tax preparation.
P9	Yoga Instructor	M	30s	Former insurance auditor. Provides private, in-home yoga instruction. Trying to transition away from instruction to running yoga workshops for instructors at different locations.
P10	Urban Developer	F	30s	Has a background in economic development, urban planning, and art. Cycles through a variety of opportunistic freelance projects that she finds interesting and that engage with different aspects of her experience.
P11	Blogger, Photographer	F	vc	Single mom who started very successful blog on mothering. Fills gaps in employment by taking boudoir photos.
P12	Event Planner, Educator	F	20s	Holds several jobs. Curates vendors in craft fairs for various clients; conducts social network marketing for architects; runs a non-profit gallery; gives educational talks at art museums.
P13	Network Creator	M	30s	Develops the future by putting new social systems into action. Created network of workspaces for freelance workers and a currency system in support of barter. Curates business events.

insights in parallel with the interviews, processing and integrating the information of each new participant to build an understanding of this kind of work. Each week team members would report on interviews they had completed. This led to discussions that critiqued our focus and pushed towards a more refined focus for the interviews yet to be performed. During these sessions, we probed on connections between the interview being reported and observations from previous interviews. As we passed the halfway point in interviewing, we began to generate affinity diagrams and conceptual models including service offering stereotypes, underlying service models, and value flow diagrams that detail the flow of value and the co-production of value between the customers, service providers, and stakeholders.

4. Findings

Participants reported many reasons for choosing to become micro-service providers. The most popular was a desire to regain control over their lives. Participants had a broad range of aspects they related to the term “control,” but most focused on control of their time, their work practices, and the territorial struggles that can happen in a workplace. P10: *I can come and go as I please. I can handle projects and people on my own.* P5: *I have reasonably strong opinions with the way things need to be done ... I have no tolerance for politics [at work].* P11: *I was disappointed with my day job. I left before dark and came home tired, and realized I'd just used the best hours of my day on someone else that was not my son.*

In addition, several participants reported their personal desire to improve the world as a key motivator. P3: *I feel great about helping to build the community where I live.* P7: *You can't just bitch, you have to change things.* P8: *We've built something that will make the world a better place.*

Several participants shared how the choice to move away from an employer connected to the pursuit of happiness. P1: *The 9-to-5 job was affecting my marriage. I am much happier now ... I whistle to work.* P9: *I didn't have a connection with other jobs like I do with this one.* However, the choice to forgo an employer could create conflicts and tensions. For example, P10 needed to work many hours to make enough to live and to meet the commitments she had made. *Happy? I've been doing a lot of self-examination lately because I'm stretched so thin with both my jobs. I need to make time for my child.* P10 also discussed tensions around expecting work to be fulfilling; that this goal might not be reachable. *Is this the future, if we move jobs every two years because we lose interest or don't care about our job?* Participants felt tension around the desire for work that was meaningful and exciting, and the idea that their lives should be about more than work; that family and other priorities might be more important. Their reflection on the choice to be a micro-service provider often made this tension explicit.

Almost every participant spoke of having a high tolerance for risk. Some even expressed pleasure in embracing uncertainty. They viewed this as a critical difference from the norm. P6: *... maybe I feel more comfortable being a risk taker because I have a lot of back-up plans, which help me feel more secure.* P11: *You take this route because you're trusting more in yourself than a company to take care of you. It's a risk.* P5: *I am a realist and a pragmatist, but also an optimist ... I embrace uncertainty.* P10: *I am OK feeling uncomfortable, knowing that the sand is always shifting.*

P2 presented an interesting counterpoint. While most participants' reactions ranged from ecstatic to “fairly happy,” P2 was quite unhappy with this change in his life. He left a high-level position as a journalist at a national news organization when he relocated for his wife's job. Now he did freelance video producing and news reporting

through blogs. He suffered a loss of status that came with his previous job; from his affiliation with a national news organization and from his high-ranking position that had earned him a secretary. Of all the participants, his choice to forgo an employer seems much more forced upon him than a decision he made in pursuit of his own happiness. P2: *I'm content; my wife is happy. ... I miss my secretary.*

4.1 Technology

In general, participants shared that technology made their choice to be a micro-service provider possible. They used ICTs to coordinate with others, to engage with and schedule customers, to deliver work, and to secure venture capital. In the cases of P5 (photo entrepreneur), P6 (career entrepreneur), and P7 (digital fabricator), their creation of and expert use of new technology was their service offering. Once again P2 provided a counterpoint to the other participants' acknowledgement that technology made their work possible and had improved their lives. P2: *Technology supplants human support ... Technology is a nuisance.* His negative view of being a service provider seemed to directly influence his perception that technology had made the world worse. In addition, he blamed technology such as blogs and mobile phones with undermining his chosen profession of journalism.

4.2 Work Challenges

We observed many challenges around strategic/career and financial planning. None of our participants responded that they engaged in strategic planning; making a detailed plan of where they want to be in 5 years as a way of influencing current actions and priorities. Most considered this an “extra,” and reported being too busy with simply doing the work or addressing short-term needs. Two participants spoke briefly about career planning. P1, the doctor, indicated that he did not have enough patients. He shared that he might switch his focus to checkups for high school athletes. P9, the Yoga instructor, shared how he was currently in the process of transitioning from in-home sessions to running workshops. He worried about dropping in-home clients before he knew if workshops could be successful. This was a clear area of concern.

None of the participants reported that they were “getting rich” as a service provider. Several even mentioned a reduction in income as a consequence of their choice. P6: *I'm currently unpaid.* P7: *I live a very minimal lifestyle.* P1: *I gave myself a limited budget and time to make this work.* In addition, participants shared they did not invest much of their attention on understanding the financial aspects of their work. Instead, they focused more on how to get the work and do the work. Nevertheless, finances were often a significant source of tension. P9: *I had been very afraid to make a wrong decision. I saved a significant amount of money, prepared to take a major financial cut; financial planning was about two years out.* P1: *My greatest risk is financial because of my family.* P4: *I don't feel secure; I live month to month. It's exhausting but it's exciting.* P11: *I have nothing in place for retirement. ... I'm really good at coming up with ideas, bad at funding and the bottom line.* Several participants worked with an accountant to help with reporting and taxes, but none had sought out financial planning services.

4.3 Service Models

We worked to identify stereotypical service models; service models that appear in current mainstream industry. Below we detail several of the stereotypes that emerged including: expert/consultant, matchmaker, contractor, and marketplace. These models often overlapped, with one job fitting more than one model.

The most popular service model was expert/consultant; someone who sells small units of their domain knowledge. This included the solo-practicing doctor (P1), in-home yoga instructor (P9), art lecturer (P12), social

media marketing (P12), boudoir photography (P11), digital fabricator (P7) and the career entrepreneur (P3). In general these seemed like traditional service offerings but at a smaller scale (solo-doctor working with no partners or nurse) or offered in more personal locations (yoga in the home instead of a yoga studio). The career entrepreneur seemed the most unusual. In this case, the expertise being offered involved matching the form of a customer's resume to better exploit factors that search engines use to surface resumes.

Three of our participants used a matchmaker model, finding value in their social network. P12 used her connections in the craft industry to curate craft fairs for different customers and venues. The photo entrepreneur (P5) used his knowledge of professional photographers to connect novices with appropriate expertise. Finally, the landlord (P4) curated the companies he allowed in his building in order to create harmony and synergy, and to improve the state of his neighborhood. This matchmaking practice was a bit different in that it was more focused on selection of the right customer versus connecting a customer with another service provider.

The digital fabricator (P7) presents a matchmaking special case. He occasionally had customers with needs he could not meet. In these cases he leveraged his knowledge of other specialty fabricators. In doing this he took on the role of a contractor, farming out different parts of the work and managing the entire fabrication process.

Two of the service offerings were marketplaces. The photo entrepreneur (P5) had created a marketplace that allowed professional photographers, who have downtime when traveling between assignments, to fill these gaps by critiquing the work of novices. This marketplace leverages the emergence of social computing as well as the placelessness of work that electronic communication supports. The timebanking service (P8) functions as a marketplace where members exchange units of time/labor. Examples include hours of babysitting or hours of tax preparation. The focus of this barter-based system was to open up more expensive services to those in need as well as to help form social connections within the church community that operates the timebank.

5. Reflection

While there are many negative consequence that emerged around the work of being a micro-service provider, we see a benefit in lowering barriers and making this type of work more accessible to people as a career choice, as a way of supplementing income, as a bridge between employers, or as a bridge to retirement. Below we detail the negative and positive aspects of this type of work, describe opportunities to lower barriers and to improve the experience of being a micro-service provider.

In looking critically at this type of work practice, we see many benefits in the findings of our interviews. In many cases this type of work increased people's happiness by allowing them to gain more control over their work practices, by allowing them to engage in work they found meaningful, and by providing an opportunity to better manage work-life balance, something that proved especially important to parents. This type of work has the potential to improve the quality of people's lives; however, this perspective on improvement must be seen in terms of an individual's opportunities for work through an employer.

On the negative side we identified three main challenges: low pay, high uncertainty, and work-life balance. As we previously mentioned, none of our participants were getting rich as a micro-service provider. We witnessed no "gold rush" like outcome that could lure people away from traditional employment. Instead, people must make a trade of a higher income and stability from an employer if they wish to gain more control as a service provider. In its current state, being a micro-service provider seems best for people who have a strong desire for control. Many

people today already give up money to do work they find more meaningful, such as working as a teacher. This raises an interesting dilemma. It seems quite possible that if there were no employers and everyone could provide a service they wanted to provide, there might be too much competition to provide specific services — for doing “meaningful” work — and that would drive down the prices people could charge.

Our participants noted their own tolerance for risk and uncertainty, something many people would not find inviting. A key aspect seems to be a lack of structure around how to practice this type of work; how to manage all aspects of a personal business. The lack of strategic planning, career planning, financial business planning, and retirement planning we witnessed was a bit disturbing. While some people thrive in environments with little or no structure, many people crave structure and perform much better when they know what to do. Companies and institutions provide this much more readily. Larger organizations leverage specialization to give each worker only a small number of tasks while micro-service providers seem left to do everything for themselves. In addition, larger organizations can gather many perspectives to improve the quality of planning and decision-making.

The challenge of work-life balance — an aspect of work particularly important to parents, people with elderly parents in decline, and people transitioning to retirement — presents a double-edged sword. Micro-service providers have more control but also fewer safeguards. They can choose to work a little or a lot. However, it is up to them to take control and to achieve a balance. We witnessed many participants who recognized that they were working too much, but it seemed they were unable to help themselves. Being self-employed, they appeared to have no regulations to keep them from overworking. If micro-services were the only type of work available, this issue of work-life balance might also negatively impact people who lack self-discipline; people who are more easily lured towards leisure. We did not witness anyone with these qualities, and we suspect that people with the tendencies would not last long in this kind of work.

Our time with P2, the former journalist, showed the power of institutional affiliation and growth of a career and status within an organization. P2 lost social status due to his lost affiliation with a national news organization. In reflecting on this, we noted that other participants had mentioned institutional affiliations in other ways. Generally they talked about the affiliation in terms of client. *I have done work for ...*, or *I am working with a guy who works for ...*. It seems that institutional affiliations work well in a person’s personal narrative to communicate credibility, quality, and status. P2 also lost the status that comes from working in an organization for a long time. Generally, people earn promotions and raises based on their length of service, and with the loss of employers, the amount earned becomes more connected to individual deliverables than to long experience.

5.1 Design Opportunities

Our findings show that being a micro-service provider is not a pancea for workers. While it is far from utopia, following this path does offer many benefits for people who are unemployed; who wish to supplement their income; who need better work-life balance, such as parents with small children or adults caring for elderly parents; and who wish to stage their own retirement. Being a micro-service provider provides new control over the role work plays in a person’s life. We note two sets of design opportunities that could open up this space: (i) increased scaffolding for running a solo business and (ii) new marketplaces for buying and selling small units of skilled labor. Design researchers and practitioners can help lower the barriers by building on these opportunity areas.

We see an opportunity for a new suite of services that function as sort of a “business in a box,” a set of tools and services that scaffold the process of running a business and allow workers to outsource many of the business

tasks to other micro-service providers so that they can focus on what they are good at, doing the specific type of work that they are expert in. This business in a box would include services for marketing, financial planning and accounting, career planning, legal services, IT services, and customer relation management. The business in a box could be tailored to fit the different service models. For example, a micro-service provider could rent a CFO and a CIO to help plan and strategize, and these CFOs and CIOs could function as micro-service providers, providing these services not to a single company, but to many individual businesses. The challenge here is to generate an effective and sustainable social ecology; providing a full suite of services.

The second opportunity, which is really a first step towards developing this sustainable social ecology, is the creation of new marketplaces to buy and sell small units of skilled labor. The photo entrepreneur (P5) created a web service allowing expert photographers to sell micro-units of their time to novices in the form of critiques. This is a great example of what these markets might look like. One challenge for these new markets is a need for better reputation management. Current web services often use a single numeric score to communicate quality of service; however, these most likely will not provide rich enough information to guide the selection of a business service. We recommend that new marketplaces look at more robust rating systems that rate a variety of service aspects. Examples of this can be found in product review magazines such as Consumer Reports [6].

6. Conclusion

In this investigation of the future of work, we reframed unemployment as an unhealthy dependency on employers. To investigate, we conducted fieldwork with micro-service providers, people who had left employment to start their own companies. We probed to understand how they perform their service as well as why they decided to leave employment. Our results point to many positive aspects, such as improved control and the ability to do work they find meaningful, but also several negative aspects, such as high uncertainty and a general lack of planning. We see a benefit in lowering barriers to this type of work as it could benefit the unemployed, people in need of greater work-life control, and people hoping to stage their own retirement. Finally, we note that barriers might be lowered by providing new services that scaffold the running of a business, and by creating marketplaces where micro-service providers can more easily hire the services they need to run their own business.

7. References and Citations

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