

The Rise of the Micro-Multinational: How Freelancers and Technology-Savvy Start-Ups Are Driving Growth, Jobs and Innovation

By Ann Mettler and Anthony D. Williams

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Left to right, Mettler and Williams

Ann Mettler is executive director and co-founder of the Lisbon Council.

Anthony D. Williams is senior fellow for innovation at the Lisbon Council and the award-winning co-author (with Don Tapscott) of *Wikinomics: How Mass Collaboration Changes Everything* and *Macrowikinomics: Rebooting Business and the World*.

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The Rise of the Micro-Multinational

As crisis engulfs the world's leading economies, there is great concern about job creation and energizing growth rates.¹ The sudden arrival of subdued, Japanese-style growth prospects for North America, Europe and the rest of the developed world – combined with years of sluggish employment figures – have given increasing urgency to the task of finding effective responses. But so far, nothing seems to have worked. That is not surprising, as traditional levers of policy intervention tend to be designed around the interests of economic incumbents – existing market players – rather than the newcomers that are today's key engine of growth and jobs.

Consider this: All net job growth in the United States between 1980 and 2005 came from firms less than five years old.² And, interestingly, in each year between 1997 and 2008, more than 2.5 million people simply created their own job by becoming entrepreneurs (and also created more than one million additional paid employment positions each year).³ In other words, 65% of all jobs created in the US in that time were jobs that entrepreneurs created for themselves, making freelancing an increasingly important source of employment and a significant, albeit often overlooked, cornerstone of modern economic activity. In Europe, the numbers are similar. Some 32.6 million people are classified as self-employed, which accounts for more than 15% of total employment.⁴

The vast majority of Europe's self-employed, some 23 million, are freelancers, meaning they work for or in one-person companies. And while the crisis has had a negative impact on the overall employment situation in Europe, a European Commission study recently found that self-employed entrepreneurs were much more resilient to the economic downturn than dependent workers and employees.⁵

At the forefront of this seismic shift in the way jobs are created and economic value added is a new type of company, the micro-multinational. Traditionally, these small, self-starting, service-driven companies would have been described as small- and medium-sized enterprises, or SMEs, but thanks to the Internet, the emergence of new business platforms and the increased openness of the global economy, these companies can enter markets with a minimum of bureaucracy and overhead. Add to that their unparalleled ability to respond promptly to changing market developments, a collaborative DNA that often translates into superior innovation performance and the lack of the institutional inertia and legacy relationships plaguing larger organizations, and one begins to see the transformative and paradigm-changing potential.

Take Local Motors, a radically new kind of car company founded in Chandler, Arizona by Jay Rogers, a former US Marine with

1 For a list of people who should be thanked, please see the acknowledgements on page 29. The authors would particularly like to thank Hal Varian, chief economist of Google and professor emeritus at the University of California at Berkeley, who first coined the phrase "micro-multinational" in a 2005 editorial in *The New York Times*. See Hal R. Varian, "Technology Levels the Business Playing Field," *The New York Times*, 25 August 2005.

2 Kauffman Foundation, "Business Dynamics Statistics Briefing: Jobs Created from Business Start-Ups in the United States" (Kansas City: Kauffman Foundation, 2009).

3 Ying L. Lowrey, *Estimating Entrepreneurial Jobs: Business Creation is Job Creation* (Denver: American Economic Association Annual Meeting, 2011).

4 Eurostat, *Self-Employment by Sex, Age Groups and Highest Level of Education Attained* (Luxembourg: Eurostat, 2011).

5 European Commission, *Self-Employment in Europe 2010. European Employment Observatory Review* (Luxembourg: European Union, 2010).

'In the past you had to be large to gain global reach; today, this is no longer the case.'

a mission to reinvent the auto industry. Rogers doesn't employ a design team and he doesn't do much in-house R&D. Instead, he has an online community of 12,000 freelance designers from 121 countries that participate in contests and collectively design next generation cars. Unlike its larger rivals, there are no massive three million square foot manufacturing facilities and no shiny global headquarters to house tens of thousands of office workers. Instead, he makes cars using a network of micro-factories, each one producing custom-built off-road vehicles designed for that particular region. And the results have been spectacular: So far, he has designed and produced around 50 off-road vehicles (that's the company's niche) and plans to produce and sell 1500 more at roughly \$75,000 [around €55,000] each. He employs around 15 full-time staff.

Examples like Local Motors may be on the extreme side – after all, not every micro-multinational is organizing freelancers on a project basis to take on bloated 20th century industrial behemoths such as the car industry. But it is a good example of the basic economics driving micro-multinationals to the forefront of today's economy. Put simply, in the past you had to be large to gain global reach; today, this is no longer the case. Typically, a company like Local Motors can conceive and design a car in 14 months – not the three- to five-year development time it can still take Detroit and some European carmakers. And customers don't need to schmooze with slick salesmen or visit

expensive showrooms to choose their vehicles. Instead, many Local Motors customers take part in designing their own cars online, customizing production to get their perfect vehicle, and cutting out an expensive distribution network that drives up the price and slows down delivery. True enthusiasts can even visit the Local Motors factory and take part in building their car themselves.

But the truly transformational development is this: In the 19th and 20th century, firms needed to get big to attain the scale necessary to develop global distribution networks, to tap into global talent pools and to bring in the large revenue that drives profits and creates jobs. As the world enters the 21st century, this formula has been stood on its head. Today, many large companies are hampered by their size – bogged down in bureaucracy and overstaffing that makes them painfully slow to take decisions and often blinds them to important new opportunities emerging in today's markets. This, in turn, leaves them singularly unprepared to take advantage of the radical new opportunities on offer, and facing the world with a cost structure that makes it difficult for them to compete with leaner, new enterprises like Local Motors. The result is that large companies are under increasing pressure to deliver more with less – a fact which may well account for the jobless economic recovery we have seen in 2010 and 2011, and could well be an indication that big companies, no matter how much economic stimulus is applied, are never

'Entrepreneurs, freelancers and the self-employed are in a position unlike ever before to become the engine of jobs, growth, innovation and future prosperity.'

going to deliver the jobs that politicians are counting on them to provide.

But it also means that entrepreneurs, freelancers and the self-employed are in a position unlike ever before to become the engine of jobs, growth, innovation and future prosperity – and to deliver on their dreams. Put simply, technology puts them in the driver's seat, allowing them to scale up and deliver products without having to build the huge infrastructure and bureaucracy that 20th century enterprises relied upon. The difference over time is a revolution in the way economic value is created, with smaller companies now able through technology to gain the scale that only larger ones could previously aspire to. Under these circumstances, the speed, agility and responsiveness that their small size permits becomes a major asset, rather than a liability. And it is no surprise that, more and more, big companies are starting to depend on the ability of smaller companies to help them meet deadlines, deliver top-of-the-line work and effectively embrace fast-changing market conditions to which their own sclerotic management structures are not capable of responding quickly enough.

This has important implications for the labor market, too. Policymakers must understand and embrace the fact that jobs are being created not by yesterday's

economic heroes, but by tomorrow's emerging champions – and focus their policy on stimulating the creation of more globally-focused SMEs and creating a social system that facilitates and supports work in this area, as we will argue in part four of this policy brief. Undoubtedly, it is a good news story – unless you choose to view it from the nostalgic lens of yesterday's economy. There has never been a better time to be an entrepreneur, to write your own job description, to create a profession for yourself and to find your own way forward in a highly diversified modern economy that puts so much power at the mere click of a keyboard. And that is exactly what more and more people are doing.

This policy brief is divided into four parts. Part one, which you have just finished reading, is intended to introduce the concept of micro-multinationals and explain why we believe their dramatic arrival on the economic scene is but the first shot in a wider, rapidly unfolding revolution. Part two will look in greater depth at the changing economic landscape and the forces driving micro-multinationals to the forefront of modern economic developments. Part three will discuss the changes that micro-multinationals are themselves making on the world around us, and part four will look at the implications for policymakers and make eight recommendations.

'The difference over time is a revolution in the way economic value is created.'

The Changing Economic Landscape

The world is changing very quickly – for corporations, and also for the individuals who work inside them. In the post-World War II era, personal success was most often defined by orderly and structured career paths (usually for men, who were considered the sole breadwinners) in well-known, large, vertically-integrated industrial conglomerates. As Anthony D. Williams has argued elsewhere, innovation during this time was largely incremental, mostly the result of intensive research conducted by a designated, closed-off department and undertaken by a small and elite group of employees, usually scientists. The fruits of their work were protected by stringent intellectual property regimes, with many companies regarding the number of patents they registered as the best sign of their innovative prowess.⁶

But that was then. Today, in the second decade of the 21st century, these practices are reminiscent of a bygone era. Virtually everyone alive today will have several jobs throughout their lives, and sometimes even several careers in different fields. Innovation has become disruptive, remaking entire industries in a matter of years, even months. At the same time, successful products and services can come from anywhere and anyone, catapulting small start-ups to global leadership in record speed, and making every person with a bright and actionable idea a potential star entrepreneur. Intellectual property is now often purposefully shared and

used to co-create new products and services.

Yet despite these new realities, the old paradigm continues to be the guiding policy blueprint in most countries because it reflects a world we associate with success and prosperity. At the same time, policymakers are naturally inclined to favor stability and continuity over disruption and the unknown, while valuing domestic companies, particularly the cherished large national champions, over other enterprises that are perceived as “foreign.” But policymakers can no longer close their eyes to these transformative shifts, which are taking place right under their legislative noses:

1. Most jobs are created by young companies and start-ups. OECD research shows that when firms with similar characteristics in terms of country, industry, firm size and age are compared, age explains a substantially larger share of the overall variation in job creation and total job reallocation than size.⁷ In other words, job creation declines with firm age. It is thus not surprising that, as the figures cited at the outset of this policy brief show, firms less than five years old accounted for all net job growth from 1980-2005, and business start-ups account for almost 20% of gross job creation in any given year, despite the fact that they account for only 3% of overall employment in the US.⁸

⁶ See Don Tapscott and Anthony D. Williams, *Wikinomics: How Mass Collaboration Changes Everything* (New York: Portfolio, 2006).

⁷ OECD, “How Do Industry, Firm and Worker Characteristics Shape Job and Worker Flows,” *Employment Outlook 2009. Tackling the Jobs Crisis* (Paris: OECD, 2009).

⁸ John C. Haltiwanger, Ron S. Jarmin and Javier Miranda, *Who Creates Jobs? Small vs. Large vs. Young* (Cambridge: National Bureau of Economic Research, 2010).

‘From their first day on the job, micro-multinationals can access international markets – once the exclusive domain of corporate giants.’

2. Today technology makes it possible for small companies to gain the reach and traction of big companies at very low cost.

Nothing has empowered and enabled small- and medium-sized companies more than technology. A recent study found that at least one-third of SMEs make extensive use of web technologies, and those that do have benefited tremendously, using new Internet-based services to perform the functions that entire departments once performed for large corporations.⁹ Against this backdrop, it makes sense that SMEs that heavily use web technologies grow and export twice as much as others.¹⁰ They also create twice the number of jobs. A strong presence on the Internet not only benefits the companies in question but also the economy at large. In the United Kingdom, for example, 71% of SMEs use the Internet with medium or high intensity and the Internet contributes about 5.4% to British GDP. In Russia, on the other hand, only about 41% of SMEs have medium or high Internet usage and the Internet only contributes 0.8% to Russian GDP.¹¹

3. New platforms and online business services are making it easier for small companies to focus on areas where they add value.

In the past, entrepreneurs had to build most of their business infrastructure from scratch, adding tremendously to their costs and workload. Today, micro-multinationals have the same capabilities at their fingertips as

their macro-counterparts because they can purchase most necessary back office services at minimal cost online. And they also enjoy a symbiotic relationship with a vast secondary market for global business services (See the box on *Six Business Platforms that are Revolutionizing the Start-Up* on pages 26-27 for more information about this increasingly important phenomenon). From globally accessible cloud computing services to mobile-to-mobile international phone connections and online sales and advertising platforms, the possibilities to connect, outsource and streamline are endless. From their first day on the job, micro-multinationals can access international markets – once the exclusive domain of corporate giants – via readily accessible platforms and services provided by companies like Google Inc., Salesforce.com, Skype, Facebook, Amazon.com, eBay Inc., FedEx Corp. and many others. In addition to improving company performance, these platforms are also increasingly important in finding new clients and matching talent pools with job opportunities. Entrepreneurs can access all of these business services at a fraction of the cost of building and managing them internally. “You can bootstrap a company much more easily,” says Kim Polese, CEO of SpikeSource, an open-source software services start-up that has flourished in this new environment. Ms. Polese estimates that her company’s expenses for hardware, software, and network bandwidth are as little as one-tenth of what they would have cost five years ago.

⁹ Matthieu Pélissié du Rausas et al. *Internet Matters: the Net’s Sweeping Impact on Growth, Jobs and Prosperity* (San Francisco: McKinsey Global Institute, 2011).

¹⁰ *Ibid.*

¹¹ *Ibid.*

'From globally accessible cloud computing services to mobile-to-mobile international phone connections, the possibilities to connect, outsource and streamline are endless.'

4. Internationalization – the key to success for almost all contemporary businesses, large and small – is easier to achieve via the Internet.

To this day, and despite the on-going talk of globalization, internationalization is still not sufficiently recognized as a key driver of company growth, success and profitability, perhaps because of the inherently domestic focus of policy making and policymakers. However, financiers and venture capitalists know that successful internationalization – and the effort to use the Internet to tap immediately into a global customer base of seven billion potential consumers – can make all the difference, which is why they now encourage the start-ups they fund to implement global strategies from day one to gain access to larger markets and reduce costs. According to a USA Today survey of venture capital-backed start-ups created since 1999, nearly 40% have employees outside the US.¹² And 60% of companies with fewer than 500 employees have budgeted one to five million dollars on outsourcing this year.¹³ In an analysis by the London-based Centre for Economic Policy Research, researchers found that companies that are “regionally minded” are four times less likely to innovate than their globally connected counterparts.¹⁴ In terms of product development, the addition of just one new international relationship improved a firm’s odds of successfully introducing new ideas by 26%.¹⁵

5. Today’s workforce has changing priorities.

Micro-multinationals like Local Motors may be enabled by technology, but they are inspired by people’s passions and by their desire to master their own economic destiny. Indeed, countless research studies have shown that growing numbers of talented and creative people wish to develop their careers in a more flexible manner and pursue livelihoods outside the confines of traditional bureaucracies.¹⁶ The 2010 Freelancer Survey, for instance, cites among the top five reasons to decide to freelance, the desire to have more flexibility, more creative control over projects, to be able to work from home, to make more money and to grow a business.¹⁷ These “free agents” defy the typical image of the security-craving, risk-averse employee who strives for a lifelong job with a safe employer, ideally the government or a large, established corporation. Freelancing is particularly important in economies with a large creative industry. In the United Kingdom, for instance, freelance numbers increased by 15-20% between 1998 and 2008 and generated an estimated £222 billion [€254 billion or \$346 billion] in sales in 2006, or approximately 8% of total private sector turnover.¹⁸ The shift towards free agency is well documented in the work of scholars and commentators such as Richard Florida, Daniel Pink and Robert

12. Council on Competitiveness, *Where America Stands: Entrepreneurship. Competitiveness Index* (Washington: Council on Competitiveness, 2007).

13. Clare Ansberry, “Outsourcing Abroad Draws Debate at Home,” *The Wall Street Journal*, 14 July 2003.

14. Rune Dahl Fitjar and Andrés Rodríguez-Pose, “When Local Interaction Does not Suffice: Sources of Firm Innovation in Urban Norway,” *CEPR Discussion Papers 8267* (London: CEPR, 2011).

15. *Ibid.*

16. Google, *The Decisive Decade: How the Acceleration of Ideas Will Transform the Workplace by 2020* (Mountain View: Google, 2010).

17. Amanda Hackwith, *Freelance Confidential: The Whole Truth on Successful Freelancing* (Melbourne: Rockable Press, 2011).

18. John Kitching and David Smallbone, *Defining and Estimating the Size of the UK Freelance Workforce: A Report for the Professional Contractors Group* (Kingston: Kingston University, Small Business Research Centre, 2008).

‘The “talent-as-a-service” model is attractive to employers who can get access to valuable skills on-demand, and to freelancers, who can build reputations as reliable service providers and earn money from the comforts of their homes.’

Reich.¹⁹ Collectively, they suggest that modern economies have entered a new era of work, one where most workers are untethered from large institutions and where conventional institutional bureaucracies cease to be the dominant organizational form for business, government and society. Or in the words of Andrei Cherny, senior fellow at the Center for American Progress: “In this economy, each worker is, in effect, their own small business – responsible for guiding their own career and economic future.”²⁰

The shift towards free agency has picked up since the recession, but the transition has also been aided by booming marketplaces for freelance talent through such web-based service providers as Elance and oDesk.²¹ In July 2011, some 250,000 companies paid 1.3 million registered freelancers on oDesk, a web portal which bills itself “the marketplace for online work teams,” for over 1.8 million hours of work, up from half that amount a year earlier. The “talent-as-a-service” model is both attractive to employers who can get access to valuable skills on demand, and to freelancers, who can build reputations as reliable service providers and earn money from the comforts of their homes. Of course, not all free agency can be attributed to rising entrepreneurial zeal or the desire for greater career flexibility. For

a significant segment of the labor market, free agency is not so much a career choice as it is a reality imposed by a sclerotic, two-tier labor market that has forced many into taking employment matters into their own hands.

6. Experienced and highly skilled individuals are setting out in record numbers to work for themselves.

During the last decade, until 2008, the total number of self-employed was steadily increasing. In Europe, there were 32.6 million self-employed in 2008 compared with 30.6 million in 2000.²² In the US, there were 15.8 million self-employed in 2008 compared with 14.6 million in 2000.²³ Following the crisis in 2008, the numbers of self-employed declined slightly. However, people employed in the self-employment sector showed greater resilience to the unfavorable economic conditions, at least in Europe. In 2009, the number of self-employed fell by only 1% compared to a 2% drop in the number of dependent workers.²⁴ Also, and contrary to conventional wisdom, self-employed Europeans are not youngsters. On the contrary they tend to fall within a higher age group with almost 40% over the age of 50.²⁵ The same holds true in the US, where the highest rate of entrepreneurial activity belongs to the 55-64 age group over the past decade. The lowest level of entrepreneurship is recorded by the

19. See Richard Florida, *The Rise of the Creative Class: and How It's Transforming Work, Leisure, Community, and Everyday Life* (New York: Perseus, 2002) and *ibid.*, *The Great Reset: How New Ways of Living and Working Drive Post-Crash Prosperity* (New York: HarperCollins, 2010); Daniel H. Pink, *Free Agent Nation: The Future of Working for Yourself* (New York: Business Plus, 2002); and Robert B. Reich, *The Future of Success: Working and Living in the New Economy* (New York: Vintage, 2000).

20. Andrei Cherny, “A Jobs Plan for the Starbucks Generation,” *Financial Times*, 04 July 2011.

21. Visit www.elance.com or www.odesk.com for more.

22. *Op. cit.*, Eurostat.

23. Steven F. Hipple, “Self-Employment in the United States,” *Monthly Labour Review* (Washington: Bureau of Labour Statistics, September 2010).

24. *Op. cit.*, European Commission, *Self-Employment in Europe 2010: European Employment Observatory Review*.

25. *Ibid.*.

'On the upside, these freelancers represent a potentially significant pool of latent job creators that could be activated if equipped with the training, mentorship, resources and incentives they need to grow their businesses.'

20-34-years-old age bracket.²⁶ Interestingly, many of the self-employed choose not to employ other people and instead remain one-person operations. Of the more than 32 million self-employed people in Europe, 23 million were freelancers.²⁷ On the upside, these freelancers represent a potentially significant pool of latent job creators that could be activated if equipped with the training, mentorship, resources and incentives they need to grow their businesses.

Collectively, these developments are reshaping our economies in fundamental and lasting ways. But our political institutions have been slow to adapt. Precious financial resources have been poured into propping up yesterday's

industries and political capital has been spent on maintaining the power of economic incumbents, while Internet-empowered start-ups like the micro-multinationals described in these pages have been largely ignored, even though they are among the only kind of companies creating market-driven jobs these days. The result has been, not surprisingly, subdued economic growth and a distinctly stagnant job market. Knowing what does not work, it is now time to shift gears and finally to use the crisis as a once-in-a-generation opportunity to lay the foundation for a "New Work Order" in which the future is seen not as a challenge we can't meet but as an opportunity that we should make available to all.²⁸

How Micro-Multinationals are Remaking the World

Paul Krugman, the Nobel-prize winning economist, once noted that, had you told a farmer in the 1830s that less than five per cent of the population would work on the land in 150 years' time, he would have shuddered at the prospect, not knowing that most manpower-intensive agrarian jobs would soon be replaced by better-paid, less volatile employment opportunities. The same is true today. Many of us also shudder at the prospect of large domestic corporations losing influence and jobs because of smaller, often "foreign," competitors; a workforce that essentially takes employment matters

into their own hands, including assuming responsibilities for social protection hitherto provided by employers and the state; an economic system that is constituted by a myriad of actors that are highly dependent on rapid, continuous and deep-seated technological advancement.

While it's too early to provide definite answers to what exactly this New Work Order will look like, a few issues stand out that deserve further study because they are likely to profoundly impact the future of the economy, the corporation, the state and the individual.

26. *Op. cit.*, Hippel.

27. *Op. cit.*, Eurostat.

28. See especially Thomas L. Friedman and Michael Mandelbaum, *That Used to Be Us: How America Fell Behind in the World It Invented and How We Can Come Back* (New York: Farrar, Strauss and Giroux, 2011).

'Despite the sheer economic might of macro-multinationals, they have been puny engines of job creation.'

The New Corporation

For more than a century, large industrial corporations have dominated virtually every sector of the economy. So deeply embedded in the fabric of society have these lumbering industrial-age creatures become that we would scarcely recognize a world without their near monopoly over production. Nor would we recognize a world without the hundreds of millions of jobs that large multinationals have created over the last century.

As signs mount that this near monopoly on production is quickly deteriorating, legitimate and sometimes troubling questions are being raised about the implications of this trend for job creation and standards of living in advanced industrial economies. In the short-term, it would be hasty to simply write off the contributions that macro-multinationals make to wealth creation, innovation and prosperity in today's world. Large multinationals remain formidable forces and will continue to play an essential role in the global economy for some time. A McKinsey Global Institute study found, for example, that multinationals headquartered in the US employed 19% of all private workers, earned 25% of gross private sector profits, and paid out 25% of all private sector wages in 2007.²⁹ Multinationals also oversee 74% of America's private sector R&D spending. And since 1990, they've driven 31% of the growth in real GDP and an astounding 53% of all gains in labor productivity.³⁰

But despite the sheer economic might of macro-multinationals, they have been puny engines of job creation, particularly in the US and Europe where headcounts are shrinking as multinationals do the majority of their hiring overseas. In fact, multinational companies cut their workforces in the US by 2.9 million during the 2000s while increasing employment overseas by 2.4 million, according to data from the US Commerce Department.³¹ That's a big change from the 1990s, when multinationals added jobs everywhere: 4.4 million in the US and 2.7 million abroad.³²

The trend highlights the growing importance of other economies, particularly in rapidly growing Asia, to macro-multinationals like General Electric Co. and Wal-Mart Stores Inc. The data also underscore the vulnerability of the US economy at a time when unemployment is high and wages are stagnating, given that multinationals typically pay above average wages. Indeed, many business analysts view the data as a sign that the US may be losing its appeal as a place for big companies to invest and hire.

At a recent speech in Washington, Jeffrey Immelt, GE's chief executive, said his company's recent cuts in the US (28,000 workers between 2005 and 2010) don't reflect a relentless hunt for the lowest wage locations, or at least they don't any longer. "We've globalized around markets, not cheap labor. The era of globalization around cheap labor is over,"

29. McKinsey Global Institute, *Growth and Competitiveness in the United States: the Role of its Multinational Companies* (San Francisco: McKinsey Global Institute, 2010).

30. *Ibid.*

31. David Wessel, "Big U.S. Firms Shift Hiring Abroad," *The Wall Street Journal*, 19 April 2011.

32. *Ibid.*

'These days, big companies destroy jobs to become more productive. Young companies, by contrast, are the engines of job creation because they need people to find and develop opportunities to scale.'

he said. "Today we go to Brazil, we go to China, we go to India, because that's where the customers are." In 2000, 30% of GE's business was overseas; today, 60% is. In 2000, 46% of GE employees were overseas; today, 54% are.³³

These job contractions and economic dislocations are not surprising in light of the shifts discussed in this policy brief. The original argument in favor of large corporations was economies of scale, the assumption that, as companies grow, unit costs fall and productivity and profitability rise. But that was before technology leveled the playing field between big and small, and prior to realizing that growing big too often meant growing slow, inward-looking and bureaucratic. These days, big companies destroy jobs to become more productive. Young companies, by contrast, are the engines of job creation because they need people to find and develop opportunities to scale.

But if macro-multinationals are getting leaner and shifting more and more jobs overseas, can start-ups and micro-multinationals single-handedly fill the gaping hole in the jobs market? Not in the short-term, to be sure. After all, if smaller units can innovate, produce and create value with significantly less manpower than established corporations, and at a fraction of the cost, it stands to reason that today's start-ups may never grow into 300,000 person operations as their predecessors did in their days of worldwide expansion.

Critics fear that entrepreneurs who can hunt for lower-cost talent internationally will have fewer and fewer reasons to create jobs at home. Indeed, the reality is that most micro-multinationals simply would not exist without access to foreign talent and overseas service providers that do things cheaper than workers and service providers in North America and Europe.

Over the long-term, however, prevailing labor market trends suggest that fostering entrepreneurialism is really the only job creation game in town. Macro-multinationals are unlikely to restart hiring domestically and recession-ravaged governments can no longer afford to massively increase public sector employment; in fact, most jurisdictions are hastily downsizing and imposing austerity-like conditions on public sector workforces. So the only viable option is for the masses of unemployed to take increasing responsibility for creating their own economic opportunity. As Lynda Gratton of the London Business School puts it in her book *The Shift: the Future of Work is Already Here*: "The pleasures of the traditional working role were the certainty of a parent-child relationship. You could leave it in the hands of the corporation to make the big decisions about your working life... Now," explains Ms. Gratton, "the world is moving towards an adult relationship, where each of us is required to take a more thoughtful, determined and energetic approach to exercising the choices available to us."³⁴

33. Jeffrey R. Immelt, "Keynote Address to Jobs for America Summit 2011," *US Chamber of Commerce*, 11 July 2011. Quotations from the speech are from Wessel, *op. cit.*.

34. Lynda Gratton, *The Shift: the Future of Work is Already Here* (London: HarperCollins, 2011).

'Over the long-term, prevailing labor market trends suggest that fostering entrepreneurialism is really the only job creation game in town.'

The Project Economy

Driven by technology and the rise in freelancing – but also by the need to boost productivity and cut costs – more and more economic tasks these days are being executed by temporary teams of workers that come together for a time to produce a single outcome – then go their separate ways, much as Hollywood produces films. Because of the difficulty that many companies face with their own legacies and bureaucratic lethargy – and the pressure they are under to actually deliver for clients – it is becoming increasingly attractive to them to assemble highly specialized teams of professionals for specific tasks rather than hiring staff full-time and year-round. After a task is completed, all parties involved go their separate ways, with no one – least of all the contractor – being responsible for any involved party, whether with regards to securing the next job or providing social assistance. This is the new reality for millions of companies and people. And, while it may challenge our traditional notions of company loyalty and life-long social protection, for those who are successful, floating from project-to-project can be a highly liberating and rewarding way of making a living.

Take 24-year-old Ben Kaufman, the founder of Quirky.com, a new kind of consumer product production company and perhaps the ultimate embodiment of the project economy. His so-called “social production” firm leverages community input to go from idea generation to engineering to market ready products such as bicycles, protective cases for your

iPad and yogurt makers in a matter of weeks. In its unique approach to product development, ideas for new products are sourced from a community of contributors who actually pay for the privilege of pitching them; a broader community of designers, technologists and financiers is engaged throughout the research and design phase; and, when a product is brought to market, those who contributed to its development and sales are rewarded with a share of revenue (Mr. Kaufman claims that the inventor of “Pivot Power,” a flexible power strip and one of Quirky.com’s most popular products, will earn \$150,000 [€110,675] in royalties this year alone). Once a product is launched, the contributors typically disband, only to roll-up their sleeves and start all over again. As of Q3 2011, the Quirky community (which has grown to 65 full-time employees and in excess of 100,000 members) has developed 175 new consumer products and generated some \$10 million [€7.38 million] in sales for the year. To boost sales further, the company has established brokered agreements with conventional retailers such as Bed, Bath & Beyond to stock products that the Quirky community develops.

Quirky.com provides a window into a very different kind of labor market and a radically dispersed way of producing goods and services. Perhaps most important, its social production model embodies the very characteristics that some of the world’s most talented people now demand: freedom to work on projects that one is passionate about, the opportunity to meet and collaborate

'The creation of *ad hoc*, self-organized teams that come together to accomplish specialized tasks will become the norm.'

with other talented people in an environment that thrives on innovation, and a meritocratic incentive system where value-creators share in the profits.

Looking forward, the creation of *ad hoc*, self-organized teams that come together to accomplish specialized tasks will become the norm, so we better wrap our minds around what this means. For one, consultancy is likely to be the dominant contractual model for work in the future, but expect more employees to demand a share of the profits derived from their intellectual contributions. Constant change and renewal in one's career path will mean less stability, but there will be gains in economic efficiency. Many companies are full of bureaucracy, procedures, and approval processes – a structure designed to defend the integrity of the organization – whereas teams and communities that form around shared interests and needs will have no more process than they require. The community exists for the project, not to support the company in which the project resides. That's a quantum leap from the old, industrial-age model of production.

Yes, our work will still largely define who we are, but our employers no longer will. Our sense of stability and our sources of encouragement, learning, and growth in our careers will come from communities of practice and our engagement with like-minded peers whom we will meet and keep in touch with online. Meanwhile, the people we will meet at work will join the personal networks we create as we move from organization to organization over the

life span of our careers. We might even expect to see new guild-like formations with codes of conducts that set the formal and informal norms and rules that govern how a growing number of people carry out their trade. At the same time, the proliferation of social innovation hubs, hacklabs and do-tanks in urban centers will provide freelancers and entrepreneurs with access to all of the technology and collaboration space they need, without having to commit valuable resources to maintaining a traditional office space. This move towards collaborative workspaces will undoubtedly continue and accelerate in coming years. Indeed, it has even led to the creation of a micro-multinational that specializes in co-working spaces. It is called The Hub, and now spans across five continents and 26 cities.

New Business Relationships

Far from being the weak link in the New Work Order described above, micro-multinationals will not only be important innovators in their own right (especially given that their innovations are typically disruptive); they will also play an essential role in the innovation ecosystems of large enterprises. In today's economy, small is an asset, and being large often a liability. That is why more and more macro-multinationals are choosing to set up new ventures that are supposed to be quick, innovative and agile outside of the mother company, thereby not subjecting them to unnecessary bureaucracy and giving them more freedom to experiment and take risks. This is not a new idea. Pioneered by Lockheed Martin in the 1940s, when it set

'Many companies are full of bureaucracy, procedures, and approval processes, whereas teams and communities that form around shared interests and needs will have no more process than they require.'

up the Advanced Development Programs (ADP) as an autonomous unit to develop a number of famous aircraft designs, this approach has come to be known as Skunk Works.³⁵ As micro-multinationals are exerting more and more competitive pressures on larger companies – be it because of their higher productivity, profitability or innovation performance – it is likely that more large players will come to see the merits of Skunk Works, voluntarily granting a high degree of autonomy in the expectation that it will lead to superior innovation performance.

Take Nespresso, an autonomous globally managed business owned by but set up outside of the Nestlé S.A. The unit took off in the middle of the last decade, after combining advances in quality (hermetically sealed capsules) with innovations in design (sleek coffee machines), distribution (mail order and wholly-owned single-purpose coffee boutiques) and marketing (ads featuring George Clooney) – all innovative approaches that would have been difficult to achieve had the unit been set up within the normally staid management structures of the CHF 109 billion [€89.1 billion or \$120 billion] Swiss mother company. Today, Nespresso is one of the fastest growing businesses in the Nestlé group. In 2000, Nespresso employed 331 people – today, it employs 5,500 people and generates CHF 3 billion [€2.45 billion or \$3.3 billion] from global

sales.³⁶ To compare, in 2010, Nestlé employed 281,000 employees, 51 times more than Nespresso, even though it generated only 36 times more revenue.³⁷

But Skunk Works and spin-offs are hardly the only solution that large enterprises are resorting to. From open innovation and crowdsourcing to IP licensing deals with smaller companies, there are a number of new innovation models that established firms are counting on to revive their fortunes. A company like Procter & Gamble, for example, can not only harness the skills of its 9,000 full-time researchers and product developers, but a much larger network of 1.8 million external problem-solvers that form part of its *ad hoc* and virtual innovation team. Once renowned for its closed and secretive approach to innovation, the company now gets in excess of 50% of its new product ideas from people outside the company – a feat that has shaved \$1 billion [€738 million] of its R&D costs and raised R&D productivity by 60%. Or take technology giants like Apple Inc. and Google. Despite having thousands of the world's most exceptional talents at their disposal, both companies have built vast ecosystems of freelance software coders that have collectively developed hundreds of thousands of applications for their popular mobile technology platforms, giving customers access to staggering levels of continuous innovation. It is painfully palpable to companies like

35. It has this rather unusual name because the original Lockheed facility was located adjacent to a plastic factory which emitted nasty smelling fumes, and thus came to be known among employees as the "Skunk Works". For more information, visit http://en.wikipedia.org/wiki/Skunk_Works.

36. Nespresso, *Corporate Background* (Paudex: Nespresso, 2011).

37. Nestlé Group, *Factsheet 2010* (Vevey: Nestlé, 2010).

'Micro-multinationals pose a formidable intellectual and policy challenge for domestic innovation systems.'

Procter & Gamble, Google and Apple, along with most other observers, that the very nature of innovation is changing dramatically – and large companies are not always in the driver's seat. It's a new world, not only for the micro-multinationals but particularly for their macro counterparts. Leading global companies are out in front of these changes: They have become leaner, more networked and collaborative, they excel at customer service and they can run intricate global supply chains of mind-boggling complexity with the timing and precision of Swiss trains. But too many traditional multinationals are ill prepared for what's to come. Coddled by protective, often subsidy-granting – but now broke – governments and hampered by a poor track record of servicing consumer needs, these companies are facing huge challenges that are of utmost relevance to the highest echelons of policymakers.

New Models of Innovation

Micro-multinationals pose a formidable intellectual and policy challenge for domestic innovation systems. Not only do they undermine the validity of domestic showcase innovation initiatives, such as clusters, but they also hold the potential to be politically sensitive. Micro-multinationals, by definition, don't know national boundaries. Many of the jobs they create will be in foreign countries (though statistics show that even jobs created abroad by these firms will amount to net job creation for the home country).³⁸ And

they will likely sub-contract some services to people outside of the cluster, district, region and possibly even country where the enterprise is based. But a recent study from the Centre for Economic Policy Research, a leading European research network in economics, challenges the notion that creating a cluster, i.e. putting companies together in a single geographic area and encouraging them to become each others' customers, suppliers and collaborators, will kick-start growth and jobs.³⁹ Researchers found that, for the 1,604 companies studied in the five largest Norwegian cities, regional and national clusters were "irrelevant for innovation." On the contrary, the key drivers of innovation in Norway were the communication channels that local entrepreneurs maintained to the outside world, as well as their open-mindedness towards foreign cultures, new ideas and change in general. Companies that were considered "regionally minded" – maintaining ties with players within the same cluster – were found to be four times less likely to innovate than the globally connected.⁴⁰ Silicon Valley, for example, succeeds not as a local "business cluster" but rather because it is an integral part of a globally connected network in which sharing information, engaging in risk-taking and utilizing global talent are the norm.

The fact that thanks to the Internet and modern technologies, such as cloud computing and low-cost

38. See Philippe Legrain, *Aftershock: Reshaping the World Economy after the Crisis* (New York: Little, Brown, 2010).

39. *Op. cit.*, Fitjar and Rodriguez-Pose.

40. *Ibid.*

How Micro-Manufacturing is Revolutionizing Production

Until recently, only large companies had the manufacturing muscle to bring physical goods to the mass market. But thanks to contract manufacturing in China and affordable 3D printing, yesterday's factory is evolving into a global community of custom design and personal fabrication services that open up the world of physical product manufacturing to just about anyone with some ingenuity and a good idea.

Today, a clever inventor or product designer can set assembly lines in China into motion with nothing more than some keystrokes on their laptop. A few days later, a prototype will be at their door, and once it all checks out, they can push a few more buttons and be in full production, making hundreds, thousands, or more. The era of the virtual micro-factory is here and for the first time entrepreneurs can design and sell products to a global market without a physical plant or even inventory. In fact, with new services such as Ponoko, based out of New Zealand, micro-multinationals can arrange to have their products manufactured and delivered direct to customers virtually anywhere in the world. Upload a design to the website, select the materials and Ponoko does everything else. Entrepreneurs who are just getting started can even post their products to Ponoko's marketplace. Says Chief Strategy Officer Derek Elley: "It's a bit like low-cost global manufacturing and peer-to-peer commerce straight from your living room."

Ponoko and other micro-manufacturers have benefited tremendously from an extraordinary shift in the business practices

of Chinese factories. During the economic slowdown, manufacturers seeking new customers became increasingly flexible, web-centric and open to custom work where the volumes are lower but the margins higher. A search on Alibaba.com, the largest aggregator of China's manufacturers, products, and capabilities, pulls up a long list of suppliers that will manufacture product designs in batches as small as a single unit. Alibaba's Instant Messaging service even translates between Chinese and English in real time, so customers can communicate with suppliers using their native language. Since its founding in 1999, Alibaba has become a \$12 billion [€8.9 billion] company with 45 million registered users worldwide.

The upshot of micro-manufacturing platforms like Ponoko and Alibaba is that creators can now turn their ideas into tangible offerings with less risk, lower costs, instant scalability and less complexity – and without the need for large, highly-trained and highly-paid workforces on their own payroll. In turn, consumers get lower prices for individualized products, and perhaps most importantly the decentralized manufacturing model promises to reduce the environmental impact tied to production – mostly through the elimination of intermediaries, material efficiency and reduced need for transportation.

Making low-volume, high-value and customized components is all very well, but could 3D printing and micro-manufacturing really compete with mass-production techniques that have been honed for over a

'Creators can now turn their ideas into tangible offerings with less risk, lower costs, instant scalability, less complexity and without the need of large, highly-trained and highly-paid workforces on their own payroll.'

century? Established techniques are unlikely to be swept away, but micro-factories already make everything from cars to bike components to bespoke furniture in any design you can imagine. Amsterdam-based Freedom of Creation, renowned for its lighting designs, has 3D-printed fixtures gracing the interiors of luxury hotels around the world. Canada-based Weatherhaven, which supplies portable shelters, digitally explores and validates its custom designs without having to build physical prototypes. This saves the company up to \$100,000 [€73,953] per shelter. Even the medical profession foresees a time when more sophisticated 3D printing will produce replacement organs or drug therapies. And yet, these developments are just beginning.

Micro-manufacturing's most revolutionary developments will manifest when 3D printers reach price points attractive to ordinary households. MakerBot's Thing-o-Matic (the company's most affordable 3D printer) comes close already. Literally a factory for your desktop, this laser printer-sized appliance retails for \$1299 [€960] and can print just about any 3D shape into plastic (five years ago, you couldn't get anything like this for less than \$125,000 or €92,441). From custom chess sets to decorative lampshades, MakerBot enthusiasts seem to have endless imaginations when it comes to dreaming up new uses. Users who like to tinker can share their custom modifications with like-minded "makers" who congregate on Thingiverse.com, a collaboration and discussion platform where users swap product designs by the thousands.

True, these makers may be in the vanguard – for now. But momentum is building quickly. Terry Wohlers, who produces an annual in-depth study of the advances in additive manufacturing technologies, estimates 3D printing will grow to become a \$5.2 billion [€3.85 billion] industry by 2020, up from \$1.3 billion [€961 million] in 2010. Meanwhile the most recent Maker Faire in San Francisco — an event that caters to a growing population of makers and their fans — attracted more than 100,000 engineers, programmers, tinkerers, hackers, builders and general-interest do-it-yourselfers. And with local "hackerspaces" and Maker Faires now booming in urban centers around the world, it's only a matter of time before the technology matures to a point where the mainstream market follows.

When that happens, manufacturing-intensive industries will confront the same dramatic upheavals as those faced by publishers and media empires in the wake of the digital revolution. In time, 3D printing capabilities will make remixing and sharing atoms as easy as manipulating and disseminating bits. Tinkerers might even swap product designs over the Internet and print out a physical product in the convenience of their living rooms. As science fiction author and blogger Cory Doctorow writes in *Makers*, his new book on the subject: "The days of companies with names like 'General Electric' and 'General Mills' and 'General Motors' are over. The money on the table is like krill: a billion little entrepreneurial opportunities that can be discovered and exploited by smart, creative people."

‘What we are witnessing is of historic significance and can perhaps best be thought of as the decentralization of the economy.’

telecommunications, it is no longer necessary to live where one works, is a huge boon to relentlessly talent-scouting companies in Silicon Valley and elsewhere. And while the superficial explanation for engaging labor from other countries is cost, it is in reality much more than that. Foreign collaborators, whether they be freelancers or employees, bring local know-how, language capabilities, not to mention the cultural diversity that is so key to innovation in modern economies.

However, even though location has become less important, there is still a key role for immigration. Countries that hope to deliver superior innovation performance have to be a magnet for global talent. Going back to Silicon Valley, it is worthwhile noting that by the end of the 1990s, over half of its 200,000 scientists and engineers were foreign-born, primarily in Asia. These immigrants, who were often excluded from established networks, nonetheless quickly created ethnic, social and professional ties that supported their career advancement and entrepreneurial success, with high-profile immigrant start-ups including Sabeer Bahtia’s Hotmail, Jerry Yang’s Yahoo! and Min Zhu’s WebEx.⁴¹ In these economically challenging times marked by high unemployment, it can seem outlandish to worry about attracting immigrants. But the very opposite is the case: it is precisely because there is such weakness in the economy that high-skilled talent from around the world is more needed than ever.

New Models of Social Protection

Most contemporary social protection systems were designed for a very different economic reality, essentially the post-WWII industrial era, with its mostly male workforce, employed in steady, often for-life, jobs in big corporations, incremental innovation and an underlying demography that made pay-as-you-go pension systems seem like a sustainable proposition. We of course now know that the job for life is not only an illusion but for many people who aspire to have more flexibility and control over their careers also an undesirable trap. Innovation is disruptive and a formerly upright demographic pyramid has been turned upside down in a matter of two to three generations, undermining the long-term viability of public pensions and with it eroding the public trust that is so crucial in sustaining them. Few people are more likely to fall through the cracks of the existing social protection systems than the self-employed and freelancers. On both sides of the Atlantic, people in these employment segments have a higher risk of poverty and are more likely to lack basic social protection, such as maternity leave, despite the fact that they put in significantly more working time than others. In addition, self-employed and freelancers are imminently more exposed to economic upheavals, meaning that they are often the first to feel first-hand the effects of a downturn.

What does this mean concretely? In Europe, for example, 18% of self-employed people are classified as poor versus 6% of

41. AnnaLee Saxenian, *The New Argonauts: Regional Advantage in a Global Economy* (Cambridge: Harvard University Press, 2006).

'Being a small organization is no longer a liability but an important asset, a comparative advantage vis-à-vis bigger players.'

employees, even though the self-employed tend to work on average almost 44.4 hours a week (and 49.7 hours for employers), compared to 36.8 hours a week for employees.⁴² In the United States, on the other hand, in this latest recession 81% of freelancers were at some point either unemployed or underemployed (without qualifying for unemployment benefits), 40% did not get paid by deadbeat clients and 39% cut back or eliminated their health coverage.⁴³ It may sound paradoxical but as more people realize that they can no longer count on the state or employers to provide for economic security, it is more and more likely that even greater numbers of individuals will opt for self-employment and freelancing because despite the vulnerabilities, it is still one of the best ways to take employment matters into their own hands.

The economic and societal impact of micro-multinationals is clearly felt yet poorly understood. They are changing the division of labor between large and small organizations, between developed and emerging economies and are leading the way on innovation; they defy conventional wisdom and turn the old policy mantra that “big is good” on its head. Being a small organization is no longer a liability but an important asset, a comparative advantage vis-à-vis bigger players. Yet, many of the entrepreneurs and freelancers spearheading such ventures face a disproportionate amount of risk and vulnerability, feeling left behind as social systems designed for a different economic age have gone unreformed and are unable to meet their needs. Grasping these new realities is, granted, a quantum leap for most policymakers, but drawing the right lessons now could go a long way towards restoring growth and kick-starting employment in our battered economies.

New Policies for a New Era

The current crisis presents a once-in-a-generation opportunity to lay a new foundation for growth and employment, to adapt outdated systems to modern economic and social developments, and to equate “small” with being productive, profitable and innovative. In short, what we are witnessing is of historic significance and can perhaps best be thought of as the decentralization of the economy – a decentralization that has seen power go from developed countries to emerging

markets; a decentralization that has seen innovative prowess go from macro- to micro-multinationals; a decentralization that has seen the importance of concentrated, large institutions – such as governments and big firms – as a focal point for policy being supplanted by the rising importance of individuals who are increasingly empowered to act on their own.

This decentralization of economic power has profound implications across an

42. *Op. cit.*, European Commission, *Self-Employment in Europe 2010. European Employment Observatory Review.*

43. The data is from the Freelancers Union, a New York-based advocacy and advisory group. For more information, visit <http://www.freelancersunion.org>.

'The ensuing rise of micro-multinationals has already seen positive spillover effects on the larger economy but their potential is far from exhausted.'

array of policy domains that were crafted around a model that assumed concentration, for example in labor and social policy where pensions and health insurance are often “tied” to the employer.⁴⁴

For sure, the New Work Order described earlier in this policy brief has arrived without much prompting from policymakers, and has largely been driven by advances in technology, entrepreneurial ingenuity and changing work-life preferences. The ensuing rise of micro-multinationals has already seen positive spillover effects on the larger economy but their potential is far from exhausted. Indeed, faced with horrid unemployment rates and low growth, changing policy levers to empower these dynamic players would go a long way to driving growth, jobs and innovation.

Specifically, policymakers should take heed of the following eight recommendations.

1. Encourage new company start-ups, particularly university-based ventures.

The former have the best performance on job creation, while the latter are more than 100 times more likely to turn into a publicly traded company than non-university start-ups.⁴⁵ Young companies are by definition not as powerful or connected as existing market players – and are therefore not as much on the radar screen of the political establishment – but this should not deprive them of the political attention that they deserve. Evidence shows that small start-ups with roots in

American universities are particularly promising: 8% of these companies will go public, in comparison to a “going public rate” of only 0.07% for US enterprises founded outside of universities – a difference in magnitude of 114 times.⁴⁶

2. Accelerate movement towards a fully functioning digital economy and modern intellectual property regimes.

Few things would help micro-multinationals create jobs and generate growth more quickly and effectively than properly functioning digital economies in North America and Europe. For the US, this means the expansion of and roll out of greater high-speed broadband – people can't use digital services if they don't have proper access to them. In Europe, this means completion of the so-called Digital Agenda, which includes seven priority areas intended to expand and deepen e-commerce and digital exchange across the European Union's 27 national markets: creating a digital single market, boosting interoperability, strengthening Internet trust and security, delivering much faster Internet access, increasing investment in research and development, enhancing digital literacy skills and applying information and communications technologies to address the grand challenges facing society such as climate change and the ageing population.⁴⁷ For both sides of the Atlantic, the effort to create an integrated digital economy needs to be accompanied by a review of the intellectual property regime (IPR).

44. Thanks to Andrew Wyckoff, director of science, technology and industry at the Organisation for Economic Co-operation and Development (OECD), for a fascinating discussion on these points in an interview on 31 May 2011.

45. The data is from the National Council of Entrepreneurial Tech Transfer (NCET2), a Washington DC-based organization of entrepreneurial universities creating and funding university startups. For more information, visit <http://www.ncet2.net>.

46. Ibid..

47. European Commission, “A Digital Agenda for Europe,” *Communication COM(2010) 245*, Brussels, 19 May 2010.

'Evidence shows that heavy technology users create more jobs, grow faster, have more international connections and a far superior track record on innovation.'

Does it encourage the development of new knowledge and inventions, or is it used defensively to block innovation? As is, IPR is now often the legal shield behind which current rights holders – often firms who have no inherent interest in innovation and whose primary function is to defend patents – hide to prevent others from developing new products and services. This is particularly harmful to start-ups and smaller companies that cannot afford costly litigation and are severely harmed by the inevitable slow-down in the innovation process.⁴⁸

3. Recognize the importance of internationalization and immigration.

It may be tempting for policymakers to become inward looking and protectionist in times of crisis and constrained budgets. But the very opposite is called for. Companies that have an international presence grow faster and are more profitable and innovative. They are also more immune to an economic downturn, as they can service markets that continue to grow and prosper.⁴⁹ Internationalization is a strategy that has worked extremely well in Germany for instance, where also smaller corporations (so-called *Mittelstand* companies) are active players in emerging economies and where the government recognizes that this is a comparative advantage vis-à-vis other countries that are overly dependent on domestic demand in driving growth and employment. Clusters, which have hitherto been a key policy lever to encourage greater innovation, should be measured and evaluated on their ability

to become more international and in how well they manage to actively build ties to other actors and potential collaborators around the globe. At the same time – and even in the face of high unemployment – countries need to continue to make an effort to attract global talent and keep their doors open for high-skilled migrants.

4. Encourage companies to become intensive users of technology.

Evidence shows that heavy technology users create more jobs, grow faster, and have more international connections and a far superior track record on innovation.⁵⁰ This alone warrants policymakers' attention. But looking at the cumulative effect of tech-savvy and productive SMEs, the depth of technology adoption in firms has a profound impact on overall GDP and is therefore a matter that goes far beyond the interests of the SME community itself, which it is too often what it is portrayed as. Government-backed incubators, economic development agencies and national innovation programs must do more to familiarize themselves and their clients with micro-multinational strategies and the myriad of web-based services and platforms available to entrepreneurs seeking cost-effective business solutions. Concerted information campaigns, coupled with broader developments, such as the expansion of high-speed broadband, and targeted incentives such as providing tax breaks for technology investment (a common practice for R&D investment), could yield tangible benefits in short periods of time.

48. Ian Hargreaves, *Digital Opportunity: A Review of Intellectual Property and Growth* (London: HM Government, 2011).

49. Karen Wilson, "Encouraging Internationalization of SMEs," *Promoting Entrepreneurship in South East Europe: Policies and Tools* (Paris: OECD, 2007).

50. *Op. cit.*, Pélissié du Rausas et al.

Security in a Changing World: New Systems for an Evolving Workforce

As the economy has shifted from craft to industry to information-based work, the workforce has logically shifted along with it, becoming increasingly mobile, fluid and decentralized. And yet, our social security systems have largely remained static, creating a serious disconnect between the needs of a growing segment of today's workforce and current policies which reflect a bygone era that is not coming back. Jurisdictions that do not urgently recognize and accept this shift, and make appropriate changes to meet the needs of the new workforce, will see their most promising businesses and talented individuals moving to other locations.

Already, close to one-third of the United States' workforce (some 42 million Americans) are working independently – as freelancers, part-timers, consultants, contractors, and the self-employed. And yet, this sizeable chunk of the economy has none of the protections and benefits that “traditional” employees have. Sure, with a bit of hustle and some good connections, an entrepreneurial independent contractor can make a decent living out of a constantly shifting portfolio of gigs. But despite all of the potential lifestyle benefits, this kind of freelance existence can be tough. Freelancers lack security and most have little visibility into their financial picture beyond the current quarter. Amazingly, the majority of independent

workers go without health, dental and unemployment insurance because plans for one individual cost too much on the open market. Although some 77% of freelancers have had trouble getting paid, the reality is that few have effective recourse when payments are late or denied. Nor do freelancers have any protection against race, gender or age discrimination. And try getting a mortgage loan in today's environment without a long-term employer and/or years of steady and predictable income.

“We're dealing with an outdated employment system – it was built for a workforce from the 1930s, and it no longer works for us today,” says Sara Horowitz, founder of the Freelancers Union, a non-profit organization that represents America's independent workforce. Ms. Horowitz is right. If more people are to become entrepreneurial – in effect, creating their own jobs – then freelancing will have to become less risky and thus more attractive.

Legislators need to pay attention. Providing unemployment insurance to freelancers, for example, could stabilize their income – and the economy – when they are involuntarily unemployed. Affordable health insurance plans for independent workers could help convince a young mother raising a family to start a business rather than hold on to a part-time low-end service job. But Ms.

Horowitz also wants freelancers to band together in what she describes as a new mutualism: a cooperative of independent workers with a shared need for protection, support and vocal representation. After all, industrial-age unions organized to win a generous roster of social supports and workplace protections that did much to improve the fortunes of factory workers. So why can't digital age information-based workers carve out similar protections for a new class of untethered freelancers? It turns out they can.

The Freelancers Union founded by Ms. Horowitz already offers a system of protections and supports ranging from health, dental and disability insurance to 401K retirement plans to its network of 150,000 independent members. Ms. Horowitz says the "new mutualism" will do for today's self-employed what traditional unions did for industrial workers, except that the Freelancers Union envisions a "market-based safety net" that maximizes flexibility for members. In another prominent difference from a traditional trade union, Freelancers Union does not engage in collective bargaining with its members' widely dispersed employers. Instead, it uses its members' combined buying muscle to negotiate better terms for things like healthcare and pensions. It also runs fitness centers. The services are popular and Ms. Horowitz expects to add another 100,000 members by the end of 2012.

The Freelancers Union is not alone. In Britain, the Professional Contractors Group does something similar. oDesk has also negotiated benefits packages for contractors using its site. Cooperative health and benefit plans provided by organized networks of freelancers are a step in the right direction, if not an ultimate solution. They may even provide a stopgap measure until government-backed systems can be overhauled. But given that fewer and fewer of us are working in full-time employment, there is no time to waste in building a new support system that maximizes the flexibility and mobility of the workforce without entirely compromising the income security, benefits and protections that workers have come to expect.

'Fortunately, entrepreneurs that find themselves underserved by local providers now have the option of turning to Web-based service solutions.'

5. Develop and encourage the range and quality of services on offer to local businesses and individuals. A highly developed service economy is a *condicio sine qua non* for creating an environment in which micro-multinationals can thrive. By definition, small companies need to focus on their core competence. The more they can offload non-core functions to reliable and cost-effective suppliers, the more they can focus their staff's energies on the key factors that will drive business success, whether that be product development or customer service or something else. Innovative hubs like San Francisco and Boston have superbly developed service economies that specifically cater to start-ups and small companies with everything from IT support and data management to legal services and venture capital close at hand. In continental Europe, by contrast, business services are either hard to enlist – particularly for small players which are less attractive as clients – or prohibitively expensive because of lack of competition in the market and too few, often heavily protected, incumbent providers. This creates a double-whammy, a service sector that is under-delivering on growth and job creation while also stifling promising new companies that can't become world-class players without access to affordable quality business services. Fortunately, entrepreneurs that find themselves underserved by local providers now have the option of turning to the kind of web-based service solutions discussed above.

6. Create the right incentive structures for freelancers and the self-employed.

In an era where more and more workers are *de facto* their own small business, which they use to manage their own career and economic future, new incentives could encourage more people to create their own jobs and provide greater security for all who choose free agency over institutional career paths. For instance, tax holidays for new businesses could be directly tied to the number of jobs an entrepreneur creates, whereas retirement provisions should be more universal, personalized and portable, thereby encouraging mobility and less dependence on big employers. Lastly, unemployment benefits and health insurance coverage should neither be tied to an employer nor should they be denied to freelancers or the self-employed. As is, many freelancers and self-employed do not qualify for unemployment benefits, often because they have not had a stable income, therefore making it difficult to calculate their entitlements. The fact that most freelancers purchase coverage individually rather than collectively through group plans means that health insurance is often unaffordable and many must go without. Thus at a moment when dynamism and mobility are more important than ever to economic prosperity, traditional social welfare systems too often foster stasis and idleness, under-utilizing and leaving behind a highly talented and motivated pool of people. See the box on *Security in a Changing World: New Systems*

for an Evolving Workforce on pages 22-23 for more concrete suggestions – and some interesting information about how micro-multinationals are themselves acting to filling the void.

7. Prioritize education and skills development to ensure a large proportion of the unemployed population has a pathway to succeed in the new economy. The burden of job losses from the Great Recession has fallen overwhelmingly on lower- and middle-class workers, further reinforcing employment polarization in many advanced economies, especially the US. MIT economist David Autor found that almost one of every 12 white-collar jobs in non-managerial office work in the US disappeared in the first two years of the recession, as did one of every six blue-collared jobs in production and machine operation.⁵¹ And yet the financial crash was merely a punctuation point on a decades-long economic transformation that has been tough on middle-skilled white- and blue-collar workers on both sides of the Atlantic. Supply chains have grown both tighter and more supple since the turn of the century, making routine work easier to relocate. Meanwhile China, India and other emerging powerhouses are now capable of producing large volumes of high-value goods and services. Over time, trade and technology will continue to increase the number of substitutes for workers with only moderate cognitive or manual

skills – people who perform routine tasks such as product assembly, process monitoring, administrative support, basic information brokering and simple software coding. Even boiler plate legal work can be done by computers, just as X-rays scanned into computers can be interpreted by medical professionals on the other side of the world.

These changes have largely been a boon for workers with world-class educations and exceptional creative talents, including the individuals creating and working for the micro-multinationals mentioned in this policy brief.

Yet the same forces threaten to displace a growing segment of the professional middle class in Europe and North America. Former Vice Chairman of the Federal Reserve Alan Blinder estimates, for example, that between 22 and 29% of all jobs in the US has the potential to be moved overseas in the next couple of decades.⁵²

In the fallout from these dislocations, many people will not possess the education, skills or abilities to prosper in a truly global marketplace. Encouraging the rapid advance of new skills and abilities throughout the population must be among the top priorities for policymakers.⁵³ Equipping young people with the kinds of skills that companies are willing to fight over is particularly urgent given that dangerously high levels of youth unemployment have the potential to create a lost generation

51. David H. Autor, "U.S. Labor Market Challenges over the Longer Term." White paper prepared for the Federal Reserve Board of Governors, October 2010.
52. Alan S. Blinder, "How Many U.S. Jobs Might be Offshorable?" Center for Economic Policy Studies Working Paper 142 (Princeton: CEPS, 2007).
53. Paul Hofheinz, *Why Skills are Key to Europe's Future* (Brussels: Lisbon Council, 2009).

What Makes a Micro-Multinational Tick?

It's impossible to fully appreciate the rise of micro-multinationals without understanding how the Internet makes contracting for business services increasingly cost effective. Today, everything from market research to back-office support to contract manufacturing is available on tap. And most, if not all of it, can be managed over the web.

Suddenly, the small can become very large very quickly with superefficient business models that allow entrepreneurs to design, develop and deliver their products and services around the world with a fraction of the resources that would have been required just a decade ago.

Six Business Platforms that are Revolutionizing the Start-Up

Companies and Service Providers

Crowd financing

Start-ups can't breathe without a steady supply of oxygen in the form of investment capital. In the past, entrepreneurs could turn to their friends and family, their bankers, and/or seek a venture capitalist. Now with new collaborative venture funding platforms such as Y Combinator, TechStars and Vencorps, entrepreneurs can not only seek out short-term funding from a global online community; they can also find like-minded collaborators, get access to resources, seek out mentoring and connections, and even win new customers.

AngelList
Kickstarter
Kivaa
TechStars
Vencorps
Y Combinator

Digital utilities

Unlike previous generations, today's entrepreneurs can buy, off the shelf, practically any computing and communication function they need to run a company, from storage to word processing to free video chat services. Users of Amazon's cloud computing services, for example, pay 10 cents an hour to harness its nearly unlimited computing capacity, allowing anyone to leverage the size and reach of the world's greatest e-commerce engine – from the computer geek testing a new algorithm from her dorm room to a Mumbai-based start-up that wants to roll-out a new call center service without spending all its capital on computers.

Skype
Linux
Google Apps
Amazon Cloud
FreshBooks

Professional services marketplaces

Business process outsourcing is no longer just for big multinationals looking to shed costs. For entrepreneurs, marketplaces like Elance and Guru.com provide flexible, on-demand access to talented people and business capabilities for much less than it would cost to hire or build internally. Business owners can browse detailed work samples and customer ratings for thousands of vendors in service categories ranging from accounting to web design. Elance provides built-in software to track works in progress and handle billing, payment, and tax records, while Guru.com allows buyers to put funds in escrow until work is received.

Elance
Guru.com
oDesk
Brickwork India
DoMyStuff.com
RentACoder
Mechanical Turk

‘Encouraging the rapid advance of new skills and abilities throughout the population must be among the top priorities for policymakers.’

Micro-manufacturing

Until recently, only large companies had the manufacturing muscle to bring physical goods to the mass market. But as the machinery of factory production become available to individuals, anyone with a good idea and some ingenuity can design and sell goods globally without a physical plant or even inventory. Thanks to contract manufacturing in China and affordable 3D printing, virtual micro-factories now make everything from bike components to bespoke furniture in any design you can imagine. In the near future, tinkerers might even swap product designs over the Internet and print out a physical product in the convenience of their living rooms.

Alibaba.com
Ponoko
MakerBot Industries
Quirky.com

Innovation marketplaces

The growing value of intellectual property, combined with the connectivity provided by the web, is fuelling the creation of new online marketplaces to facilitate patent licensing and IP transfer across firms, industries and regions. For micro-multinationals, these marketplaces for innovation have tremendous competitive and economic advantages. Firms without deep R&D capabilities can license leading-edge technologies for much less than it would cost to develop in-house. Firms that are strong innovators, on the other hand, can increase their return on R&D by licensing inventions to innovation-hungry companies.

InnoCentive
NineSigma
yet2.com

E-commerce platforms

In the past, large vendors, distributors and product manufacturers dominated retail outlets to consumers. Opportunities to sell products to the masses were limited by the product placement fees demanded by powerful retailers. Today, e-commerce platforms such as eBay, Amazon, Etsy and Apple’s AppStore have opened up the world of retail to a global network of smaller producers and a long tail of niche products and services. Savvy retailers can use the power of social media to engage with niche audiences or expand their reach into overseas markets using online advertising platform like Google Adwords.

Google Adwords
Facebook
Salesforce.com
eBay
Etsy
Amazon AppStore

that is permanently scarred by its prolonged periods on the economic sidelines. As for solutions, refreshing academic curricula, diversifying post-secondary education and training pathways and incentivizing private sector training programs are among the options being pursued or considered in a variety of jurisdictions.⁵⁴ Indeed, if policymakers in North America and Europe need inspiration they would be well advised to look

to India. In an ambitious attempt to close the skills gap, the Indian government has provided the seed capital for an industry-led program to train 150 million workers by 2022 in the 20 economic sectors in which it expects high growth in the future. A similar level of ambition in Europe and North America can reduce economic polarization and help set more disenfranchised workers on a path to succeed in a globalized labor market.

54. Claudia Goldin and Lawrence Katz, *The Race Between Education and Technology* (Cambridge: Belknap Press, 2008).

'Policy and budget decisions are by definition based on data, and the lack of proper statistics is turning into a key challenge.'

8. Develop data and statistics that are commensurate with a new economic age. Existing data is poorly equipped to scientifically support observations about the formidable economic shifts described in this policy brief. Little is known about the internationalization of SMEs, despite its obvious relevance. At the same time, freelancers and employers are both recorded as “self-employed” in many statistical tables, which is technically true but there is a huge difference between, say, a financially struggling freelance journalist and an employer of a medium-sized company. The same is true for services, a sector that accounts for more than 70% of the economy, even in continental Europe and other places where the service sector is comparatively underdeveloped. There is not enough analytical segmentation within this crucial sector, which would give us more nuanced information about its performance, as well as document its supporting function to key economic actors, such as micro-multinationals. Policy and budget decisions are by definition based on data, and the lack of proper statistics is turning into a key challenge because in their absence, policymakers neither have the intellectual ammunition for justifying changes, nor the information they need to make sound decisions. It is for bodies such as Organisation for Economic Co-operation and Development (OECD) to develop better data to explain and underline the shifts that we are observing.

What these policy lessons teach us is that we need nothing less than the equivalent of a “New Deal” for this new economic age. Applying old remedies to modern problems will only deepen the crisis and prolong the downturn. And it will make people across the board more insecure and concerned for the future, as job creation will lag, innovative performance will deteriorate and growth prospects falter. Paradoxically, the volatility in the economy will only speed up the rise of freelancers and micro-multinationals, as individuals will come to realize that they can rely less and less on the state and big corporations, while more companies find less opportunity at home. Together, they will take their economic future into their own hands, with profound implications not only for themselves but also for society at large. Policymakers have two alternatives: they can choose to ignore these changes and thereby undermine a major catalyst for modernizing our economies and making them more globally competitive. Or they can choose to proactively embrace and lead these transformative developments, building a framework in which freelancers and micro-multinationals can thrive, thereby unleashing their job-creating potential and innovative prowess. Either way, the decentralization of the economy is set to continue unabated, with power shifting to the fringes. Empowering these fringes is our best – yet least recognized – way out of the crisis.


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www.lisboncouncil.net

The Lisbon Council asbl

IPC – Résidence Palace
155 rue de la Loi
1040 Brussels, Belgium
T +32 2 647 95 75
F +32 2 640 98 28

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