The Sharing Economy, Jobs and Skills

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Abstract

The global economy is entering the third wave of information technology, characterized by interconnected platforms of people, objects and resources. The Internet of Things (IoT) as a technology-enabler of the Sharing Economy and its global platforms are due to grow exponentially in the next decade, placing demands on skills and changing the employment landscape. The demand for low-value-adding work will decrease as resources are used more effectively whilst the demand for information technology skills will continue to rise in order to meet the requirements of developing IoT products, software, apps, networks, cloud infrastructure, data management and information systems.

The Internet of Things (IoT) will change the way we live. The Sharing Economy will bring about new types of revenues. Jobs and skills will take a new direction. We need to be ready for the Third Wave in order to retain and develop our competitive edge.

The First Wave of Information Technology came in the 1980s when the first computers appeared in our homes and organisations. Some of us here today are old enough to remember the first ZX81s, Ataris and IBMs, followed by Compaq computers and IBM clones. It was a time when IT moved into the H2M era when humans started to interact with electronic machines on a domestic scale.

The Second Wave was when the Internet made its way into homes and workplaces in the mid-1990s. We experienced the browser wars of Netscape and Explorer. We witnessed the search engine wars of Yahoo and Google. We started to shop on global online marketplaces such as e-Bay and Amazon. It was the era of the H2H digital platforms, where human-to-human electronic transactions were made possible on a worldwide scale.

The Third Wave has already started. It is pervasive, yet not obvious enough for us to be overwhelmed by it. The Third Wave is gathering momentum through the IoT, a network of Smart Objects that can be sensed, controlled and managed through the Internet. We expect to have Smart Objects in industry sectors as wide as fitness, healthcare, retailing, transportation, education, connected homes and smart cities. The IoT will merge two worlds - the physical world and the digital world.

Reports by Gartner estimate that there will be 25 billion objects connected and managed over the Internet by the year 2020. To give a sense of the scale of this prediction, there are currently 6.8 billion connected mobile phones in the world,

just short of the 7 billion figure of the Earth's population. The IoT will interconnect a population of Smart Objects over three times the size of the human population.

The IoT is being popularised by the current trend in wearables, led by brand names such as Jawbone, Polar and Fitbit, which has a market capitalisation value of 5.8 billion USD. Activity trackers are worn or integrated into our smartwatches, to measure our movement, pulse rates, postures and even hydration levels. They communicate with the Internet, upload information to our mobile phones and keep track of our physical condition. Adhesive wearables the size of small skin plasters are already developed to facilitate the remote sensing of patients, in and out of hospitals.

The drivers of the IoT are the new generation of microprocessors that are high volume, low energy, low cost and disposable. Semiconductor companies are producing microchips that are 2mm in size, the size of the tip of a fingernail, costing 50 cents to €1.50. We can envisage the extensive utilisation of this affordable technology.

Other applications of the IoT will be found in the industry for the management of heating, ventilation, air-conditioning, points of sales, smart electricity grids, parking spaces or traffic congestion. IoT will help us manage our homes' energy consumption and home security. There is a revolution in the Insurance Industry, with pilot studies already happening locally. Trackers are placed in cars to measure the use or misuse of our vehicles. The data is transmitted on the internet to the insurance company, which in turn will calculate future insurance premia based on usage and safe driving. Other IoT applications in transportation are related to asset tracking of public transport and private cars.

The Sharing Economy, also known as the Collaborative Economy, is another phenomenon. We are already experiencing the many-to-many business model, which Amazon, E-Bay and Alibaba have been using for some time. When Amazon started out with a B2C (business-to-consumer) model selling publishers' books to individuals, it did not make a profit. It started generating profit when it moved to a C2C (consumer-to-consumer) model enabling many consumers to sell their books to many other consumers around the globe.

We are observing another interesting dynamic in the Sharing Economy: the rise of the Excess Capacity Business Model, where we take stock of excess resources that we no longer need and reallocate them to other users. We are already doing this via eBay for second-hand goods. Local economies with excess properties are benefitting from accommodation platforms such as Airbnb for the rental of holiday homes. Another platform, Lyft encourages car-pooling utilising empty care space. If we all shared a car with one other person on the way to work, there would be half the number of cars on our roads during the ever-expanding rush hour. Uber has disrupted the taxi industry by pooling the excess capacity of private drivers and taxi services on one platform, making them readily available on smartphones in many cities.

The Sharing Economy is affecting the manner in which we manage excess capacity, how we reduce it and how we utilise it efficiently. We can rationalise how we use extra office space, transportation, warehouse storage and building materials. When we merge the technology of the Internet of Things and the Excess Capacity Business Model we move towards the 'Uberisation' of everything. We combine technology to manage resources using car locators, automated property locks, ground and building sites drones to monitor, control and reorganise utilisation.

There are new organisational models, which are unusual, bizarre and unprecedented. For example - the largest media platform in the world, Facebook does not own any content. The largest taxi company in the world, Uber, does not own any cars. The highest valued retailer in the world, Alibaba does not own any stock. The largest accommodation platform, Airbnb does not own any properties. Large scale businesses have become possible without large scale investment in physical assets.

How will IoT and the Sharing Economy affect human capital, jobs, skills and future careers? We are experiencing the rapid emergence of crowd working formations that have already been adopted by innovative IT and Fintech companies. Companies are telling us that "we do not need a company but that we need eco-systems of workers". We are observing distributed tele-cooperative networks of internal and external people performing jobs that used to be fulfilled internally. We are seeing the replacement of traditional company hierarchies and the rise of cooperation networks that transcend towns, cities and regions.

Crowdsourcing of suppliers is also on the rise. There are open calls for tenders and suppliers over the internet using innovative apps. The practice is widely used by the IT and R&D industries. Examples would be the use of Freelancer.com and Fiver.com for the sourcing of IT and communication services; sourcing high-tech R&D services via Innocentive.com; testing anything from artificial intelligence (AI) applications to new websites on Amazon Mechanical Turks mturk.com, and raising capital for business ventures over KickStarter.com.

The efficient use of resources and the excess capacity business model imply that there will be less demand for low value-adding jobs that are related to redundant processes and resources. We may see the end of rubber stamp jobs perpetuated by bureaucracy. The decrease in the need for certain jobs will be more than compensated by the increase in the demand for new IoT skills, in technology and supporting services such as management, marketing, finance, accounting and regulation.

The World Bank predicts that there will be two million unfilled technology jobs globally in the next ten years. These are not necessarily pure IT Jobs – they include hybrid competencies in finance, banking, accounting, in managing creative teams and in driving innovation. There will be a significant demand for jobs in business intelligence, big data analytics, lower level number crunching, information security and user interfaces design, whereby screens will no longer remain rectangular but will become ergonomically designed for wearables.

Our careers in traditional professions will require more knowledge of technology tools and technology management for us to be competitive in our industries. We will experience a demand for hybrid skills and competencies. Whilst twenty years ago it was uncommon for a professional in accounting, public policy, banking or finance to require any form of technology knowledge, today graduates are likely to be hired faster and to attract higher salaries if they demonstrate a very basic understanding of SQL, PHP, HTML, Java, HBase, Windows Azure or AWS (Amazon Web Services).

There are many ways to continue developing our competencies post-graduation. There are many online platforms that can provide for our continuous professional education and to help us catch up with the deluge of opportunities presented to us by IoT and the Sharing Economy.

Learning never stops and will continue post-graduation if we are ambitious regarding the economic competition. We can strive to evolve in our jobs, in our careers, and we will continue to evolve as industries grow and flourish around us. We are privileged to be living at a time when the global economy is moving forward and technology is taking us in new and exciting directions. Let us keep in mind a critical maxim for success - when resources are limited, the possibilities are endless.

(The speech content is based on market adoption research of network products, which is published in part in the Wiley Encyclopaedia of Management, Vol 12 Strategic Management of which Professor Sammut-Bonnici is Joint Editor.)

Bio-note

Professor Tanya Sammut-Bonnici is Pro-Rector for Strategic Planning and Enterprise at the University of Malta, and Joint Editor of the Wiley Encyclopedia of Strategic Management. Professor Sammut-Bonnici has held managerial and executive posts in the microelectronics, telecommunications and banking industries. Professor Sammut-Bonnici's contribution to academia lies in Strategic Management. Her research is published in the International Journal of Management Reviews, European Business Journal, Encyclopedia of International Management, Encyclopedia of Marketing Management, as well as leading textbooks including Strategy Analysis and Practice, and Dynamics of International Strategy. Professor Sammut-Bonnici received the honorary title of Associate Fellow at Warwick Business School, University of Warwick, UK and has acted as Guest Editor of the Management Research Review.