

Commentary

# The jobs – they are a-changing

Education system must prepare students for jobs that require creativity, social intelligence

Arnoud De Meyer

I am always intrigued by the assertion that one in two jobs today will no longer exist by 2025. It is true that many of today's jobs did not exist 10 years ago. Who would have thought in 2005 to be a Uber driver, a big-data miner or a mobile phone app developer? Change is now constant; education must prepare students for that new reality.

**HOW IS WORK CHANGING?**

Four key drivers of change will have significant impact on the workforce globally. First, the automation, or "cybermation", of non-routine manual and cognitive tasks has been made possible by rapid technology advances. It has been forecast that two-thirds of all current jobs, especially those of mid-level skilled workers, may disappear in the next 15 to 20 years. For example, two Oxford University researchers have calculated that there is a probability of more than 90 per cent that the jobs of retail salespersons, accountants and auditors, and telemarketers will not survive the next two decades.

Second, the traditional hierarchical organisation is becoming obsolete as the Internet and the pervasive availability of information enable workers to trade their skills more freely on the open market. Alternative forms of organisation may have to be developed to allow international telecommuting and facilitate the

collaboration of virtual teams in a human cloud.

Third, many of the babies born today may well live longer than 100 years. Thus they may have to work much longer; perhaps their retirement age will be 80 or higher. The design of work and the workplace may have to be adapted to keep this ageing workforce productive despite the inevitable decline in physical strength and mental flexibility.

Lastly, the middle class in East Asia is growing and increasing its consumption more rapidly than anywhere else. The middle class incentivises innovation through its consumption patterns and preferences. This opens up incredible opportunities for Singaporeans prepared to embrace the region.

**HOW DO WE PREPARE STUDENTS FOR THIS NEW WORLD?**

The jobs most likely to exist in the future are those that require flexibility, creativity and innovation, or social intelligence. The education system will therefore need to foster these skills and qualities.

Students today learn and act differently because of their entanglement with new forms of information and communication technologies. The student who is always connected, has access to an overload of information, wants to freely express opinions on blogs and combines living in virtual and face-to-face networks, is different from the one who went to lectures and developed to allow international telecommuting and facilitate the



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Therefore, we need to look for a different learning paradigm that optimises the learning of this new student. At the Singapore Management University, we have created an environment that takes these differences into account, with courses and learning experiences that bring the real world into the classroom.

We need to prepare students for a longer professional life that will not be a sequence of jobs but may well be a portfolio of careers. The sort of linear progression typical in current organisations may be replaced by a life over which we have different careers, perhaps interspersed with gap years or sabbaticals.

As usual, individuals adapt much faster to these new trends than organisations, institutions and governments. More young people are trying out different professions and experimenting with different forms of entrepreneurship before starting on the career ladder.

Such a portfolio of careers may require a different approach to education, in particular higher education.

Stanford University's Hasso Plattner Institute of Design, informally known as the "d.school", argues that in the coming years we will see the emergence of an "open loop university" in which students no longer receive a standardised four-year college education, front-loaded at the beginning of adulthood, but a lifetime of learning opportunities.

It proposes a system whereby a student would have a flexible six years of study over a lifetime, where knowledge is obtained across classrooms and practical settings, and where seasoned adults return to pivot careers and reconnect with the university community.

Singapore's SkillsFuture programme is based on a similar concept. The opportunities in this part of the world are immense. But

we need to prepare our young people for the cultural and infrastructure shock that they will experience when they engage with neighbouring countries.

Singapore students are quite well equipped to cope with cultural differences, having encountered them at school, in HDB estates and sports clubs, for example. But they may have less capability to cope with environments where things don't work that well or where the infrastructure is lacking.

We need to prepare young Singapore citizens to embrace the opportunities offered by this region. They need to have a global view of the world and remain open to the differences.

We need to make the pursuit of productivity improvements part of our culture to mitigate the risk of jobs and businesses going offshore.

There are many ways to compare productivity, but considering several different studies, Singapore's

## Will you lose your job to a computer?

Probability that computerisation will lead to job losses within the next two decades, from 2013

Job	Probability
Recreational therapists	0.003
Dentists	0.004
Athletic trainers	0.007
Clergy	0.008
Chemical engineers	0.02
Editors	0.06
Firefighters	0.17
Actors	0.37
Health technologists	0.40
Economists	0.43
Commercial pilots	0.55
Machinists	0.65
Word processors and typists	0.81
Real estate sales agents	0.86
Technical writers	0.89
Retail salespersons	0.92
Accountants and auditors	0.94
Telemarketers	0.99

NOTE: 1 - certain  
 Source: The Future Of Employment: How Susceptible Are Jobs To Computerisation? by C. Frey and M. Osborne (2013) ST GRAPHICS

productivity is only 61 per cent of that in the United States, and close to 70 per cent of that in European countries such as Belgium, the Netherlands and France. There is a lot to be done.

Finally, we need to prepare our students for a high-stress world that demands speed and flexibility. Working from nine to five, with clearly defined targets and well-established procedures, will disappear as "cybermation" occurs. The jobs of the future will require innovation, creativity, social intelligence and high productivity. Above all, the world of work will require more resilience. We need to prepare our students for such a world.

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