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CONCOURS ARTS ET MÉTIERS ParisTech - ESTP - POLYTECH

Épreuve de Langue Vivante MP - PC - PSI

Durée 3 h

Si, au cours de l'épreuve, un candidat repère ce qui lui semble être une erreur d'énoncé, d'une part il le signale au chef de salle, d'autre part il le signale sur sa copie et poursuit sa composition en indiquant les raisons des initiatives qu'il est amené à prendre.

Pour cette épreuve, l'usage des machines (calculatrices, traductrices,...) et de dictionnaires est interdit.

Les différents sujets sous forme d'un fascicule sont présentés de la manière suivante :

Pages 2 à 5	Allemand
Pages 6 à 8	Anglais
Pages 9 à 11	Arabe
Pages 12 à 14	Espagnol
Pages 15 à 17	Italien
Pages 18 à 21	Portugais

Vous rédigerez dans la langue choisie et en 400 mots une synthèse des documents proposés. Vous indiquerez avec précision à la fin de votre synthèse le nombre de mots qu'elle comporte. Un écart de 10% en plus ou en moins sera accepté. Votre synthèse comportera un titre comptabilisé dans le nombre de mots.

Le candidat a obligation de traiter le sujet dans la langue qu'il a choisie au moment de son inscription au concours.

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ANGLAIS

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DOCUMENT 1

Will Automation and the Internet of Things lead to Mass Unemployment?

"If we do this wrong, the technology providers could end up destroying hundreds of millions of jobs [...]," says Gerd Leonhard, futurist, author and CEO of The Futures Agency. Leonhard is referring to the threat of automation, of robots coming over here and taking our jobs.

[...] In 2013 Oxford University academics Carl Benedikt Frey and Michael Osborne released a paper, "The Future of Employment", containing a list of occupations with an automation probability score. They estimated that 47% US employment is in the high risk category. According to their methodology, the top 10 most likely jobs to be automated include telemarketers, insurance underwriters, watch repairers and accountants' clerks; but high on the list are also legal secretaries, models, estate agents, cooks and dental technicians. It's a surprising variety. But many feel the predicted rise of the robot is still just a theory.

"It's another example of statistics flying in the face of common sense," comments John Timpson, chair of retail chain Timpson in response to the idea that a number of his watch repairing staff could be made redundant to automation. "People will always be at the heart of a successful business. If you want a formula for a great business you have to fill it with great people and no amount of robots can replace that." That may be true but it also raises the point that humans, for the foreseeable future at least, are in charge and whether or not a job can be automated doesn't mean it actually will be automated. There are a number of potential inhibitors including the capital cost of automation as well as certain jobs requiring human interaction.

What do Frey and Osborne think? It's been two years since the paper was published so has anything changed? "I think developments have only lent further evidence to the claims in the paper," says Osborne. "Certainly the areas on which we focused, machine learning and mobile robotics, have only gathered momentum." Osborne has an example: "We expected waiters and waitresses to be non-automatable: what we saw as the requirement to make pleasant small talk with restaurant customers was beyond what we could see a robot server providing. Nonetheless, our algorithm gave waiters and waitresses a (high) probability of computerisation of 94%. Since then, of course, US restaurant chains like Chili's have introduced Ziosk tablets to their tables, which are able to take orders, recommend specials and take payment more efficiently than a human server."

[...] According to Chris Wilder, IoT [Internet-of-Things] analyst at Moor Insights & Strategy in Austin, Texas, "there is no doubt that many jobs will become obsolete, or outdated as IoT grows," he says but adds "new fields and expertise will emerge. Employees must evolve to compete in a knowledge-based economy. Growth in field services, asset management, robotic maintenance, remote diagnostics and analytics expertise will offset job losses due to the proliferation of IoT."

Wilder is in good company. Both Frey and Leonhard agree with the idea that new jobs will be created, many of which we have no idea yet what they will be. While Leonhard suggests that there are two main areas – technology and humanity – in which jobs will evolve, Frey also points to the notion that work is becoming increasingly project-based. So not only will we have to deal with changing job functions, we will also have to cope with the increasing idea of self-employment.

Adapted from Marc Ambasna-Jones *The Guardian* 27 May 2015

DOCUMENT 2

THE FUTURE OF JOBS - World Economic Forum Report – Jan 2016

Today, we are at the beginning of a Fourth Industrial Revolution. Developments in genetics, artificial intelligence, robotics, nanotechnology, 3D printing and biotechnology, to name just a few, are all building on and amplifying one another. This will lay the foundation for a revolution more comprehensive and all-encompassing than anything we have ever seen. Smart systems—homes, factories, farms, grids or cities—will help tackle problems ranging from supply chain management to climate change. The rise of the sharing economy will allow people to monetize everything from their empty house to their car.

While the impending change holds great promise, the patterns of consumption, production and employment created by it also pose major challenges requiring proactive adaptation by corporations, governments and individuals. Concurrent to the technological revolution are a set of broader socio-economic, geopolitical and demographic drivers of change, each interacting in multiple directions and intensifying one another. As entire industries adjust, most occupations are undergoing a fundamental transformation. While some jobs are threatened by redundancy and others grow rapidly, existing jobs are also going through a change in the skill sets required to do them. The debate on these transformations is often polarized between those who foresee limitless new opportunities and those that foresee massive dislocation of jobs. In fact, the reality is highly specific to the industry, region and occupation in question as well as the ability of various stakeholders to manage change.

Overall, there is a modestly positive outlook for employment across most industries, with jobs growth expected in several sectors. However, it is also clear that this need for more talent in certain job categories is accompanied by high skills instability across all job categories. [...]

The time-to-impact trajectory of certain drivers of change differs between industries and is shaped by the specific nature of each sector's current business model. For example, there is a wide variety of opinion among Chief Human Resources Officers regarding the immediacy of the impact of artificial intelligence and robotics on employment and skills. However, regardless of the specific industry or driver of change, it is clear that the overall pace of industry transformation is wholly unprecedented. Disruptive changes to industry sectors are already reconfiguring business models and skill sets—and will do so at an accelerated pace in the next five years. [...]

On average, by 2020, more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered crucial to the job today, according to our respondents. [...] Overall, social skills—such as persuasion, emotional intelligence and teaching others—will be in higher demand across industries than narrow technical skills, such as programming or equipment operation and control. Content skills (which include ICT literacy and active learning), cognitive abilities (such as creativity and mathematical reasoning) and process skills (such as active listening and critical thinking) will be a growing part of the core skills requirements for many industries.

Adapted from THE FUTURE OF JOBS - World Economic Forum Report – Jan 2016

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DOCUMENT 3

The Creative Destruction of your Job

The rise of crowdsourcing, crowdfunding, crowdtransporting, crowdletting etc., has transformed our economy. It has also ushered in the era of the shared economy. Previously marginalized people can now contribute, no matter how little, to all walks of life. It seems to be a fantastic opportunity for the world to access the untapped skill of the crowd. But what about the people whose jobs this makes redundant? Whither the expert?[1]

With the exponential growth in the Internet, we have seen similar growth in Internet-based companies and services. Many of these companies and services exploit the Internet's connectivity to be able to reach people who were previously excluded from a typical business' day-to-day affairs. These individuals are often willing to offer their "expertise" in return for money, recognition or simply because it is fun [...]. More importantly they are often willing to offer their "expertise" at a much lower price than an expert carrying out the same work.

This has led to the proliferation of business opportunities such as Threadless, Airbnb, iStockphoto, Über and hundreds more. These businesses engage thousands of people mostly on a casual basis, who are more than happy to make a bit of money on the side. However, for every flower each sharing bee pollinates, it leaves one fewer for the bees living only from pollinating flowers.

[...] Admittedly, professionals in the respective industries have the opportunity to jump ship[2] into the new form of sharing economy. It is an option but a very uncertain one. The sharing economy is often based on one-off opportunities for its workers. Sure there is money to be earned but it is typically not a stable wage and one that is not as well paid as the original job done solely as a professional.

[...] Just like automation before it and other related technological advances, the sharing economy is great at disrupting the job status quo. Although instead of completely removing jobs, it is making them more spread out and accessible now. Just like a disruptive innovation, it opens up new markets or replaces previously expensive services with cheaper and more basic ones. One could almost say it is democratizing access to certain services.

[...] Based on this, one would think that the rise of things like the sharing economy seem to be intuitively good for society. The question remains what to do about the newly unemployed? I think that the answer lies in education and retraining. [...] One could [...] argue for skills training on the job, paid for by the employer not the government. However, this seems risky for employers because they pay all the costs but the employee has all the benefits and could easily leave the job for a new employer (if such training doesn't create loyalty). Hence, logically one would believe that universities need to supply this [...]. If you agree with this, then you should be concerned about the escalating higher education fees over the last 20 years. This has made education unaffordable for millions of people. If the government decides not to support this necessary training by somehow reducing education fees, then one can only hope that the appearance of Massive Open Online Courses or similar ideas will be able to fill the gap. Based on MOOCs poor completion rates and limited focus, this solution still seems a long way off.

Adapted from Evan Shellshear InnovationManagement.se/strategies – 09 July 2015

[1] Where does this lead the expert?

[2] to leave their current positions