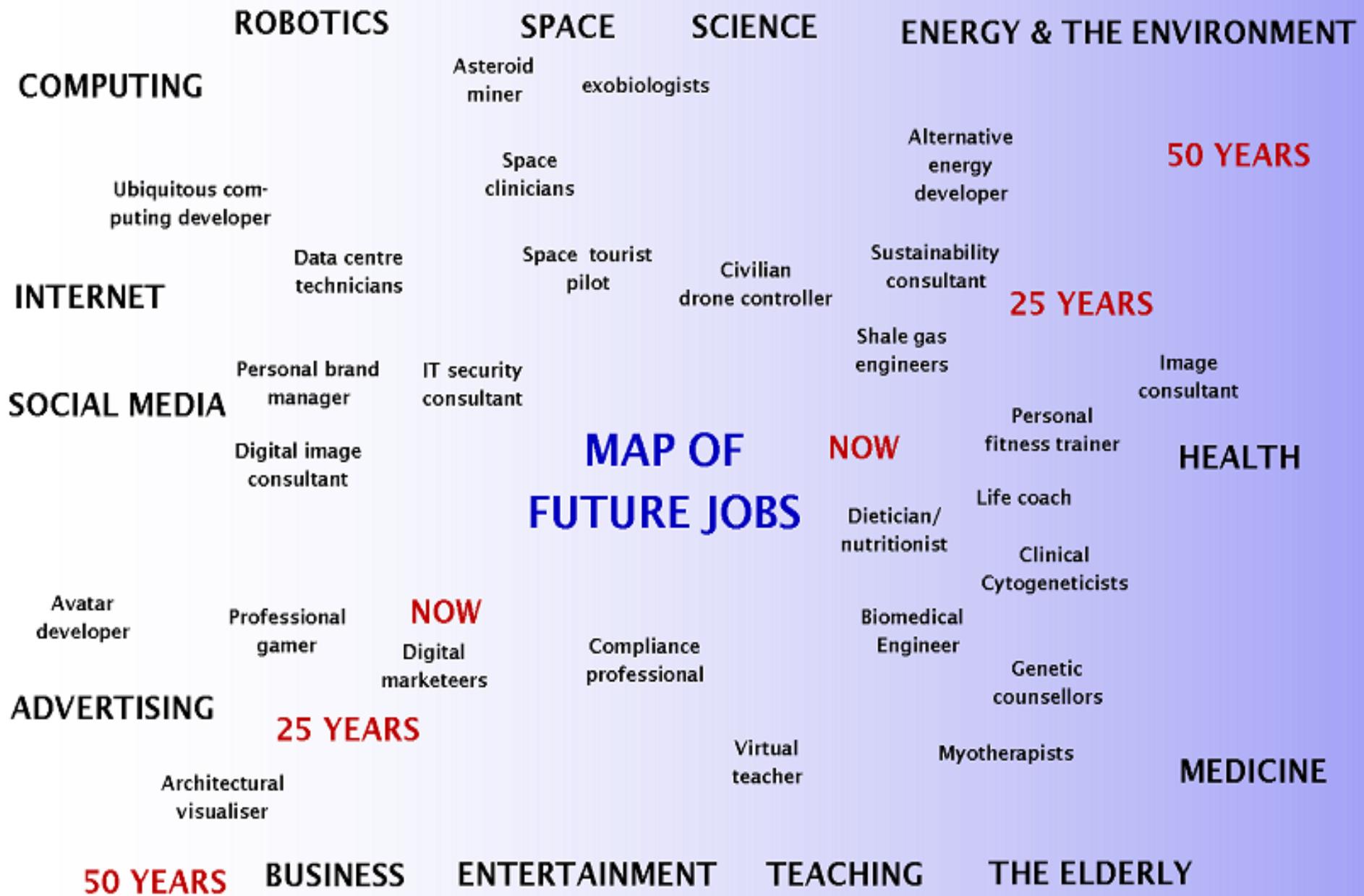


Jobs which don't yet exist or may be growth areas in the future.

Throughout history, jobs have disappeared and new jobs have taken their place. We no longer need gas lamplighters or matchmakers. Some jobs have evolved, tooth pullers becoming dentists, and typists using word processors. Some jobs are currently under threat as 'progress' sidelines their expertise: milkmen, paperboys, printers. Other jobs were unknown years ago: web designers, professional athletes, media consultants, biotechnologists. The future holds as yet unheard of job roles within IT, alternative energy and global commerce.

It is worth knowing which jobs are likely to be growth areas as employment in these jobs could make your career progression much easier in future and also provide you with greater job security.



Medicine

With an increasing population worldwide, and more importantly a growth in the percentage of the elderly due to longer life spans, there will be a need for more people to work in this area both helping the elderly and researching ailments such as dementia. There will be a demand for more **care workers** both working in homes for the elderly and visiting the elderly in their own homes and also nursing staff to visit and support the elderly.

There may be a demand for more occupational therapists to help the increasing numbers of the elderly to continue to live in their homes via modifications such as stair lifts and bathroom adaptations. More physiotherapists will be needed to alleviate physical problems and stiffness. Other types of therapists such as **myotherapists** who use manual therapy focusing on the treatment of musculoskeletal pain will be required for the elderly.

Ultimately, there will be a great increase in **robotic help**. Already we have robotic vacuum cleaners such as the Roomba and robotic lawn mowers, but eventually much more sophisticated robots will become common which can provide assistance with a range of daily tasks and also provide a form of "company" for the lonely. Architects may be required to develop "smart" houses for old people.

With advances in genetics there will be a need for more clinical cytogeneticists and genetic counsellors to advise on issues such as the future likelihood that you might get a disease such as breast cancer and what steps you could take to reduce risks.

Biomedical engineers will produce new types of artificial prosthetics and organs and **stem cell researchers** will be able to grow an increasing range of body parts. There will also be a demand for doctors trained in the transplant of artificial organs and **prosthetic designers** using modern materials such as carbon fibre and titanium: fusing machinery with biological mechanisms to help people with various disorders.

More **dieticians, nutritionists and food scientists** may be required as diet changes with more genetically modified foods needed to feed the growing world population. Production of vegetarian foods such as Quorn may increase as farm animals take much more land than crops do to produce the same amount of food.

Nanotechnologists develop and use novel nanomaterials such as graphene and carbon nanotubes which have the potential to revolutionise fields such as drug delivery, high power batteries, solar cells and computers.

Space

Space tourism is beginning to take off (pun intended!) with the appearance of Virgin Galactic and similar space companies and with the shortage of certain rare earth elements on Earth such as Neodymium, which are crucial to industries such as wind turbines, industrial magnets, aero engines, optics and visual displays ([see www.bbc.co.uk/news/world-17357863](http://www.bbc.co.uk/news/world-17357863)) we may in future need to use **space miners** to retrieve these from the moon or asteroids

If we develop colonies on the moon and Mars **exobiologists** will be required to develop food plants that can cope with extremes of radiation, heat, cold and saline water for the colonists. **Space clinicians** specialising in the effects of radiation and muscle wasting due to low or non-existent gravity will also be needed.

The proliferation of space junk in orbit around the Earth is becoming a real threat to communications satellites and even the International Space Station, so we will need **space junk recyclers** to identify the orbital locations where junk is greatest and to develop cost effective methods to remove it from orbit.

Social networks

Social network organisers and developers are beginning to appear. Personal image and branding is becoming increasingly important in Westernised societies. Because society has become more commercialised it is becoming increasingly important for individuals and companies to invest in on-line image improvers to improve their Facebook image. More people will start to view themselves as a brand especially celebrities and famous athletes and will need a manager to organise their calendars and to come up with strategies on how to remain relevant.

As people will want to present their best possible image and maintain their privacy on social networks and on the internet to either their friends or future employers they will need social media managers. Increasing numbers of employers search for an online presence before making a final decision on candidates. Professionals will ensure your online records are positive or conversely dig up hidden secrets or perhaps help people to hide or delete undesirable material.

People want the latest fashions and brands and so there may be a growth in **personal branding consultants**. **Personal fitness trainers, dieticians, nutritionists and image consultants** will be required to keep people healthy and looking good and **life coaches, counsellors and leisure consultants** will help people deal with other life problems. More **plastic surgeons** may be required as people wish to improve their appearance by surgical alteration and **tattoo artists** are already growing in number.

Wiki's are a powerful tool for sharing knowledge, and yet a significant portion of its capacity is going to be discovered through linking to social media. **Wiki writers** will find more opportunities in response to their clients' and users' needs. There are always new developments and the information needs to be up-to-date, hence people will be employed to write it. **Bloggers** are usually unpaid, but some companies are now paying for professional bloggers.

Computing and the Web

With the ever expanding web, more **web developers** and **apps developers** for smart phones and tablets will be required. Phone and tablet apps are becoming increasingly popular and designers of successful apps can make a great deal of money. Also, to design a successful app does not need a lot of money or large premises - just an original idea, so it is a good area for small company startups.

There will be a need for more cloud computing professionals - one estimate suggests more than 14 million new jobs in this field before 2020 alone

IT security consultants will be in increasing demand: as internet threats continue to be more proliferate more cyber protection will be required. There may also be more **on-line policing** roles, for example to combat illegal downloads/sexual abuse cases. In the day and age where the Internet is such a huge part of our lives, the ability of automated anti -virus software is becoming more and more into question. With the increase of internet usage and people hacking into websites, **Internet security roles** are bound to increase as the government and organisations want to step up their security in the future. The revelation that the NSA is tracking everything everyone does online suggests that some kind of external force maybe created to keep the internet a safe place for all.

Internet advertising has now overtaken traditional advertising in terms of revenue. There is an increasing demand for digital marketing specialists such as Search Engine Optimisers.

Internet shopping is growing ever more popular and on-line retailing will continue to increase and develop leading to a need for **parcel delivery drivers**. Many people are now earning their living by **buying and selling on Ebay**

3D designers are needed for games and films as are special effects designers and architectural visualisers to build virtual buildings. **Digital imaging specialists** are also increasing.

Network engineers including **fibre optic technicians** are in demand to increase the speed of networks.

With Apple constantly increasing their market share more **Apple store "geniuses"** will be employed to deliver customer service for Apple products.

With the rising of new technologies such as Google Glass, computing companies will begin looking for more ways to create ubiquitous computing where there is human-computer integration of information through everyday objects. Google Glass is a pair of lens-less glasses which utilises voice commands to connect to the internet and social networking sites. Throughout the 21st century, it is likely that such technologies will develop and accessories such as mobile phones will become more integrated with the human body leading to a need for **developers in ubiquitous computing**.

Jobs are becoming more common in **computational linguistics** where products such as Google Translate are becoming more useful by the year.

Robotics

More robots will be needed for industrial, military, medical and other purposes because they are highly efficient for unpleasant or dangerous tasks and never become bored or allow their attention to waver. We will need more skilled **robotic engineers**. Robots are even seen in the operating room performing operations with intricate precision.

Robots may move from industries where they are well established such as the automobile and nuclear industries, into the home. More jobs are likely in **robotic maintenance**. **Drone controllers** are already used by the military and is already spreading to civilian use.

Smart cars are becoming endemic and in future smart roads are likely to become a reality - where the car drives you to the destination without you needing to control it.

[Which jobs will robots replace?](#)

Entertainment

As the number of ways in which people can be entertained is growing, so is the demand for entertainment. Via tablet computers, people are able to watch television on the train or bus on their way to work. A wider variety of entertainment will be needed, as people will have more leisure time. More people will make money through short pieces, such as **video bloggers** on YouTube. With an increase in professional athletes, [sports physiotherapists](#) will be in greater demand.

There will be increased opportunities for [on-line publishing](#) with the proliferation of e-books. Journalism is moving increasingly on-line too and [multiformat journalists](#) who can work in print, radio, TV and web will also be necessary.

As the publishing industry becomes more and more digitised and e-books replace printed copies, publishers will employ more people or outsourcing employees as **book digitisers** to convert texts into e-book format to be read on handheld devices. This is extending into academic institutions as well with textbooks becoming digitised.

[Professional computer gamers](#) are now making their appearance and at a more mundane level [arena boosters](#) are professional players who play on behalf of richer players until their character is in the higher levels of the game.

Energy and the Environment

With rampant global warming, there will be a need for more renewable sources of energy, so there will be jobs in designing and maintaining wind farms, wave power and tidal energy sources, and solar panel installations - the latter may rapidly take off in the next few years as prices of panels are dropping and efficiency of conversion of sunlight to electricity is greatly increasing, so these may soon rival conventional energy sources in terms of cost efficiency. Fuel cell manufacture will probably increase to replace petrol and oil in cars.

Nuclear power may still have a role to play in reducing carbon emissions, but whatever happens, there will still be a need for staff to **decommission old nuclear power stations** - a job that will take the next century to complete. Eventually cleaner nuclear power from **fusion** reactors may become available.

With the discovery of how to extract gas and oil from shale deposits there may be a big increase for **shale gas miners** - mainly in the USA but to a lesser extent here as large new sources have been recently discovered in the UK. More **deep sea miners** may also be required to extract oil from sources that at present would not be economic.

Data centres: server farms which handle internet traffic, are voracious users of electricity already accounting for over two percent of global power demand, according to Greenpeace. This will rise exponentially in future as data storage increasingly shifts to the "cloud" and is processed in these data centres leading to a demand for more data centre technicians and designers.

Since such a large amount of CO2 emissions are coming from cars, there will be more demand for **alternative vehicle developers** who are able to come up with more environmentally friendly types of vehicle. **Technology dump collectors** will be needed to allow us to recycle obsolete technology and send it for use in the Third World rather than just sending it to landfill.

As natural resources run out we will need to move to more sustainable life styles with better [recycling and waste management](#) leading to jobs as sustainability consultants. Hydrologists and geologists may be required in larger numbers to investigate new water supplies as water supplies become more scarce.

To prevent species becoming extinct and to preserve biodiversity for future generations [genetic scientists](#) will be needed to extract and store the DNA of rare species.

As we run of land and can rely less on predictable weather patterns due to global warming, we may need to genetically engineer more of our crops and modernising farming methods via techniques such as hydroponics leading to the employment of **more agricultural engineers** and **sustainable farming operatives** to increase yields. See [Creating new life - and other ways to feed the world](#)

Scientists will be required to find methods of **harvesting energy** from external sources to power wearable electronic equipment.

Green career coaches could advise employers/workers about the environmental impacts of their tasks and thus they could help improve the environment by altering their work techniques or ethics.

Business and Law

Reducing financial costs will become more and more important. People's desire to reduce risks on their investments increasing accordingly and **financial technologists** trained to analyse financial trading can help investors reduce risks and costs.

The future financial market is unknown and changes very fast, so more people will be required who know how to use numerical or quantitative techniques to analyse the market. These are called **quants** and are very highly paid as they can produce huge profits!

Organisations are now days bombarded with an increasing number of regulations and with the need for operational transparency are recruiting more and more **compliance professionals** to make sure that organisations are complying with all the relevant laws and regulations.

We will soon start to see a big growth in **social media lawyers** to handle online legal disputes, particularly in social media and e-publishing. We are seeing issues with Twitter and personal attacks, but there is also a growth in businesses having their Twitter accounts used by disgruntled employees. There is also a significant uncertainty where companies stand with employees using LinkedIn – particularly if it is paid for by the company. Is a contact that you made whilst on a work trip the property of your employer? Therefore, it has been suggested that LinkedIn accounts might be surrendered on employment/termination of employment.

Localisation professionals make sure that company products such as advertisements and computer games work correctly in different cultures around the world. For example, an advert that in Europe showed a customer drinking alcohol would need to be changed in Muslim countries where alcohol is banned. Global sourcing managers will also be required to source the cheapest materials from wherever they are in the world.

A trend that developed very recently is the use of native advertising which tries to make advertising as natural and unnoticeable as possible. **Native Advertising Managers** are needed to come up with new ideas, create campaigns and monitor them.

As commercial organisations invest in drones to aid their business or organisation either for transport, or surveillance there will be a greater need for **civilian drone controllers**.

Education

As the population grows and also older people need to be retrained in new skills, in the future teaching will be done less in schools and more online leading to a need for more **virtual teachers** and **on-line educational materials developers**. The Open University started this trend and virtual learning programs such as Moodle, Blackboard and Web CT will accelerate this trend. Even universities are not immune with the development of MOOCs - Massive Open On-line Courses at places such as Harvard University.

The workplace of the future

The employee working a nine to five day in an office may become the exception rather than the rule. The division between work life and home life may become much less pronounced. Staff may be working from locations across the globe who collaborate at all hours of the day. Telecommuting and remote working will become common. Employees will have an online profile that goes with them whatever device they're using: PC, tablet or smart phone. They will be more mobile, more connected and more agile.

Some offices may become almost empty as employees increasingly work elsewhere and companies cut budgets and facilities footprints. Progressive companies are adopting flexible working and encouraging employees to work from home or elsewhere. [Self employment](#) is likely to increase as it becomes increasingly easy to manage a small business from your own home. [Portfolio working](#) and [working from home](#) are also likely to increase, the latter to cut down the costs and time needed for commuting and also to reduce the pollution that this incurs. [Research by Knoll](#) found that centralised offices will be different from offices of today, with a variety of working environments to suit workers with different roles. The office will become a centre for important face-to-face meetings, such as customer sales and training, intensive work sessions and social events the study.

Work smart not hard!

Productivity will be measured not by the hours you work but by what you achieve. Non-routine processes such as discovery, innovation, teaming, leading, selling and learning will become king. Work environment which are results-only, where employees choose what they want to do, when they want to do it, as long as the work gets done will become common.

As well as monetary rewards such as bonuses staff will be able to choose instead to take time off. **Rewards such as bonuses** provide a short term boost to performance but ultimately **reduce long term motivation**. Performance related pay and the carrot and stick approach have little or no long term value in motivating staff. Increasing staff autonomy is a far more effective way to motivate staff.

