FUTURIZON

Albury 2050 Futures Input

A Futurizon Report

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INTRODUCTION

There are very many articles on the web describing future projections and scenarios for 2050. They are of variable quality, so you should always use your own judgement reading them and dismiss things that look like they were produced by activists, or that clearly haven't though things through. Thankfully, common sense, clear thinking and everyday business savvy are usually enough to filter out the good from the bad. Having said that, 30 years is a very long time in technology, so it's important when thinking about 2050 to expect dramatic technology change, and some of that will have been around long enough to have had real impact on every area of life. So, think outside the box, be optimistic and imaginative, but give at least some though to the development cycle that leads up to things because that indicates whether something is just about possible in the lab, likely to be commercially available, or already widespread by 2050.

ABOUT THE AUTHOR

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Ian Pearson has been a full-time futurologist for 30 years, tracking and predicting developments across a wide range of technology, business, society, politics and the environment. He is a Maths and Physics graduate, a Doctor of Science, and has worked in numerous branches of engineering from aeronautics to cybernetics, sustainable transport to electronic cosmetics. His 1850+ inventions include text messaging and the active contact lens. He was BT's full-time futurologist from 1991 to 2007 and since then has run Futurizon, a small futures institute. He writes and consults globally on all aspects of the technology-driven future. He has written eight books and made well over 850 TV and radio appearances. He is a Fellow of the World Academy of Art and Science.

Many articles you will see illustrate some false or inflated hopes in space. We will see some space hotels, some space tourism, some sub-orbital travel using rockets such as Musk's. We will even have small bases on the Moon and the first buildings on Mars by 2050. Ignore hype on asteroids as source of rare materials down here. It will be used almost entirely as source of materials for space uses. Far too expensive to bring down to Earth.

Ignore space-based solar - potential hijacking and terrorist use of directed energy makes it unlikely to ever get approval. Misused, they could be serious weapons.

There is also some hyperbole in smart homes, 3D printing, quantum computing and cryptocurrencies. These will be important but not mind-blowingly so. AI and robotics do have a lot of potential to change life in every area, but all developments roll out slowly, not overnight, so always plenty of warning for planning purposes. We will eventually have the home help androids, but they won't suddenly appear in large numbers.

De-urbanisation is very likely. Until now, we have seen large scale migration from countryside to cities, but as technology increasingly permits all the advantages of urban life from smaller developments and post-COVID fear makes people less willing to live in cities, it is highly likely to reverse strongly.

Vertical farms typically use LEDs to illuminate plants with their preferred frequency bands so even with solar panel efficiency can improve on natural sunlight and can grow crops far faster, helping to reduce the need to transport food in. Cultured meat will be commonplace by 2050 and can also be grown in industrial areas rather than needing farms.

Public transport could be manifested as drone fleets. A pod that collects you from where you are and takes you where you want to go with no fuss or delays would be preferable to waiting for a bus at a bus stop far away from your home in the rain. Automated transport can make that happen, but only if it is cheap enough. Driverless Pods v smart self-driving cars will become a big debate. The car industry wants expensive self-driving cars loaded with sensors and AI. A simple pod system with dumb pods on a smart road system could be far cheaper, perhaps 50x cheaper. Another issue is batteries v on-road power delivered inductively to supercapacitor banks as a vehicle passes over. That needs far less resource and expense than lithium batteries. That would impact lithium mining obviously.

Expect lower plastic use, but sometimes it is the best option and todays' black and white debate will evolve to shades of grey.

Mini nuclear stations, nuclear batteries, and molten salt thorium reactors are all developing now and likely to be common in 2050. We may get fusion earlier than the 2045 it has always been expected. Linear fusion could arrive in 2030s.

ENHANCED NATURAL ENVIRONMENT

The environment already benefits substantially from high awareness and increasing wealth, more money available to protect environment and more willingness to spend it. This ongoing improvement will continue.

Contrary to green dogma, the rapid obsolescence cycle has given us very low impact devices. Mobile phones replace hundreds of kilos of 1990 IT. It helps towards efficiency in resource use across the board.

De-urbanisation means more people living in smaller towns and villages with good local stewardship.

Increased greening due to high CO2 is already very conspicuous, even if rarely cited in media. This is likely to continue with significant increase by 2050.

Many of the global warming projections cited in media are very worst-case scenarios. These are extremely unlikely, and realistic temperature increases are likely to be manageable. With CO2 emission reductions and weak solar cycles, high warming by 2050 is unlikely, and by then, fusion, modular nuclear and efficient PV solar will dominate new energy production.

Some new building materials such as energy-harvesting glass and concrete will be in use but are unlikely to dominate construction.

Automated construction using robots, drones and 3D printing will make more intricate and appealing designs feasible, adding to cultural richness in the built environment.

Economic water harvesting techs can easily provide enough drinking water even in dry remote places. For farming and other uses, such as urban parks, cheaper water desalination will solve problems in coastal areas.

Drone techs and smart systems can provide good monitoring, efficient use of fertilisers and water and rapid automated response to problems. Drones can deliver treatments without damaging crops.

Resilient plants will improve thanks to GM and ongoing developments such as CRISPR. Recently, adding a single gene to rice and potatoes increased yields by 50% and made them more drought resistant. (https://news.uchicago.edu/story/rna-breakthrough-crops-grow-50-percent-more-potatoes-rice-climate-change).

All these mean potentially more land set-aside for nature as kg/hectare increases on farmland.

Pollution reduction will continue with cleaner air and water.

Ocean plastic mostly comes from less than 100 rivers in far east. This concentration of problem makes it likely to be successfully targeted by political pressure and funding, so will greatly reduce as a problem.

Reduce, reuse, recycle has succeeded well as an easy-to-follow mandate.

A CARING COMMUNITY

Home help and companionship robots or even androids will be common by 2050, helping very old people to keep their independence and quality of life for much longer. Improving health technology will also contribute to a longer period of healthy life, before an eventual and hopefully rapid decline at the end. Higher connectivity, smart sensing and personal surveillance can provide high standards of care at the expense of privacy for older, dependent people, but younger people may be more resistant.

Privacy v functionality will be a frequent trade-off, and the temptation to force surveillance on people as a condition to access services will always be a temptation for some people in authority. A caring community must resist that and prioritise quality of life and personal freedom over authoritarianism.

A 'care economy' is highly likely to develop as machines take over machine-automatable tasks and liberate people to concentrate on being people. Partnership between caring people and smart machines will allow a good standard of personal services. More people will be involved in care work, interpersonal roles, leadership, personal services, arts and crafts, culture and entertainment, teaching, policing and other roles where dealing with other people at an emotional level is important.

Pod-based public transport could provide end to end transport, far better for social inclusion than buses and trains, and reduce congestion and need for parking. More people may get more involved in local society, culture and politics. Private money previously allocated to owning private cars could be liberated if public transport is pod-based and effective, and thus available for other purposes.

Improved potential for quality of life is a major factor in people leaving big cities to go to rural areas. Medium sized towns are a good half-way point in this. They can offer more culture than tiny developments but with some of the feel of space and being nearer nature.

Social media is a big problem in 2021 but the main issues are already being addressed and unlikely still to be major problem in decades. It is far more likely that media will be effective at providing people with a good mix of online and offline networking and socialising without the conflicts and nastiness we have today, at the expense of privacy possibly, since it likely requires anonymity to be less of an option.

A LEADING COMMUNITY

Deurbanization provides an opportunity to attract people from larger cities to towns as a mid-way adjustment path towards country dwelling. That might appeal to people in particular life stages, such as bringing up a family. In old age, some people may want to go back to 'civilisation' because of frequent need to access services, but not want to go back to big city life, so again might see rural towns as a halfway point. Recognising the types of people who most benefit from rural town life is obviously key to making the most of their potential to offer leadership to other communities or towns.

Changing demographics offers ongoing opportunity to identify and target the groups who would be best suited and who you want to come, give them what they need, and make the most of them when they do. Technology trends tend to condense expertise in clusters, e.g. silicon valley, and it is a waste trying to compete against that. There will be centres of excellence for all key techs, and those will be determined by global factors, not local urban strategies. The converse is also true, so that regions with high AI and robotics expertise might well find that such expertise will disperse and commoditise over time, with new fields such as biotech and advanced materials forming the next key centres of excellence. Also recognise that people have different life stages and accept that they may eventually want to move on instead of wasting resources and effort keeping people who are no longer a good fit. This knowledge is key to influencing the support of educational resources, i.e what courses should local colleges specialise in and try to attract expertise.

There will be more older people for sure, but it is less certain that population overall will stagnate and decline, as the WHO predicts. Birth rates are declining, but we have seen many trends go into reverse over 30 years. With increasing wealth, a healthier environment and improved energy, food production and quality of life, it is very possible (but still by no means certain) that we may see a restart of population growth in richer nations. However, babies don't arrive suddenly in large numbers, so urban planners should not find such slowly changing trends a problem.

Urban influence is no longer limited by its geographical footprint and suburbs. Towns can have cultural influence anywhere, so it's important to discover what key skills and talents in the community can be used to extend influence far beyond physical. Make the most of the skills there, don't waste time trying to mount a horse that's in another field. A town may offer exemplars in business, social care, architecture, transport system design, visual or performance arts, or indeed any domain. Providing good infrastructure and support systems to allow the right people to feel at home, discover others, make groups and grow their skills and influence is key to increasing the overall digital footprint.

The next few decades will see enormous change in very many areas, and that presents challenges and opportunities for democracy and governance, including regional economic policy. Big cities may have too much inertia for easy experimentation, so rural towns may well be ideal places for pilot schemes trying out novel democracy solutions, perhaps motivating involvement in politics and leadership. Times of rapid change offer ongoing opportunities for the right people and places to take the lead.