FUTURE NEWS

TO CONNECT, TO INFORM AND TO INSPIRE

IN THIS EDITION

THE TECHNOLOGIES THAT COULD TRANSFORM AGEING

by Frank Swain

(Image credit: Getty Images)

Providing a growing older generation with a dignified and independent life means doing more with less – and governments and industry are looking to cutting-edge technology to help.

At the start of the summer, Paula Tinkler was ready to take her career in a new direction. This may not be unusual – but the speed with which she was able to make the transition was. Within a week, she was shadowing a carer in Workington, England. Within a month, she was working as a carer herself.

Not only was her training rapid – it also took place completely in her own home. "I began the recruitment process by e-mail and completed my assessment online, which was followed by an interview and training process that was entirely digital," she says.

She did this through a UK-based company called Cera Care, a "tech-enabled care provider" that doesn't own or operate any care homes. It allows families to arrange and manage home care for their relatives using a digital platform that finds a match for customers from a pool of available caregivers. It also uses Uber to ferry patients back and forth to hospitals for appointments and an on-demand delivery service to fetch customers' prescriptions from pharmacies.

The firm has raised over £20m ($26m) in investment since its inception in 2016 and delivers around half a million home visits every month, Tinkler's included.

New, nimble models like this one may grow more necessary in coming years. Nearly one in five EU citizens is over 65 years of age, a figure expected to grow rapidly in the coming decades. A similar pattern is seen around the world. Globally, the world's population of over-60s has doubled since 1980 to around a billion. It will double again by 2050.

In the face of this looming challenge, new models will have to be devised to allow older people live healthy, independent lives. And Cera Care is are far from the only company developing assistive technologies that can keep elderly people living independently and healthily.

As populations around the world age, putting pressure on care homes, services providing at-home care may become more prevalent (Credit: Alexander Ryumin/ Getty Images)

Top of the range hearing aids, for example, now **contain fall detection as a safety feature**. An undershirt studded with sensors was key to the functionality of Alfred, **a virtual butler developed by the EU** to engage with older people and lead them through daily balance and exercise tasks. The **Lean Empowering Assistant** or Lea, meanwhile, is a robotic walker which also serves as a virtual assistant and even dance partner.

Global greying

Underlying the need for all of this, of course, is the fact that we are growing old.

"One in three people born today will live to 100," says Ben Maruthappu, Cera Care's chief executive and co-founder. "For the industry, the challenge is that as the market grows, the workforce is limited. Demand is outstripping supply – we don't have enough care homes for everybody." Not only that, he says, but most people prefer to get care at home than to move residences.

Cera also developed Martha, a virtual assistant that helps caregivers in their daily routines. "Martha has evolved to meet the needs of our clients and care workers," says Maruthappu. "It started off as a chatbot that care workers could go to for advice. Now we have an interface that provides nudges and recommendations to the carer, based on previous information that has been gathered on clients that they are servicing."

A variety of new technologies – including robots – have been developed to help people age well (Credit: Getty Images)

In 2019, the company partnered with IBM to trial the installation of Lidar sensors – more often seen on self-driving vehicles – in people's homes. The sensors collect data on how much residents move about the home, and most importantly can alert carers if the resident suffers a fall. "It's 24/7 support, rather than only when carers are there," says Maruthappu. Cera's overall goal, says Maruthappu, is to predict and prevent hospital stays – the most resource-intensive element of care and one that contributes gravely to morbidity.

However, notes of caution about the use of AI have been raised. In 2018, the Nuffield Council on Bioethics, an independent medical advisory group, published **a briefing note** on the use of AI in research and medicine, noting the potential for reduced transparency in clinical decisions, concerns over patient privacy, and an increased possibility for social exclusion.

The number of people reaching 80 years of age has increased greatly in the last century, but the number reaching 90 has not (Credit: Jesus Merida/Getty Images)

Ageing well

Although it's generally accepted that we are living longer, that is only half the story. While the number of people reaching 80 years of age has increased greatly in the last century, the number reaching 90 or 100 has not increased in same proportion. The reality is that while we live longer, those extra years aren't necessarily spent in good health.

Despite the focus on pharmaceutical solutions for ageing, some of the best strategies include daily habits like exercise (Credit: Halil Sagirkava/Getty Images)

As the average age of the population rises, more and more of us will be troubled by the chronic effects of osteoarthritis, diabetes, obesity, stroke, heart disease, respiratory illness and neurodegenerative diseases such as Alzheimer's and glaucoma.

If your lifespan is the total number of years you live, your healthspan is how many of those are spent without chronic illness. And healthspan is something everyone is keen to extend. In its 2019 industrial strategy, the UK government, for example, launched a "grand challenge" of adding five years of healthy life to each of its citizens by 2035. Meanwhile, Google's secretive Calico (a contraction of "California Life Company") has spent the last seven years and $2 billion (£1.5b) researching treatments "that enable people to lead longer and healthier lives".

Much attention has been given to medical solutions for this, for example drugs such as rapamycin and metformin, known as senolytics, which can purge morbid cells and rejuvenate the body – in mice, at least. Although as Judy Campisi – professor of biogerontology at the Buck Institute for Research on Aging in California, US, and cofounder of senolytic drug firm Unity – points out, far more prosaic options exist. "Optimising diet, exercise and social interactions helps a lot," she says. "Providing intellectual challenges, engagement or other mental activities also helps."

A question mark remains over who will provide that engagement and social interaction. As the total working population shrinks in comparison to retirees, there will be fewer people available to pay for care through their taxes – and fewer doctors, nurses, therapists and care workers to provide those services directly. The cohort of those in need will grow even while resources and health budgets constrict.
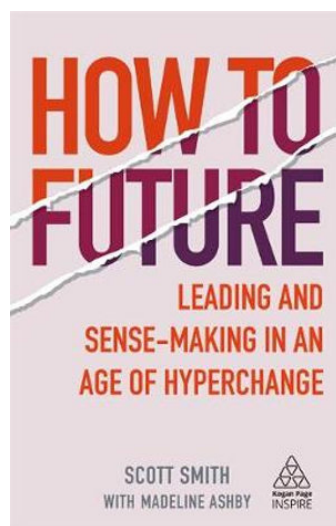
Book Review
by Charles Brass
Chair, Futures Foundation

How to Future
Leading and Sense-Making in an Age of Hyperchange
by Scott Smith with Madeline Ashby

Noah Radford, the author of the foreword, describes the need for this book like this: "As the world gets weirder and weirder, it's natural for people to seek better tools for understanding what's going in. One could even argue it is our responsibility to try and understand the future, as hard as that may be, and do our best to figure out what to do about it…." (pxvi). "This book offers tested tools for change that will help you understand how to set up foresight projects, how to deliver them, and how to work with sources of power to actually get things accomplished" (pxvii). And both Smith and Ashby have considerable experience in doing just that.
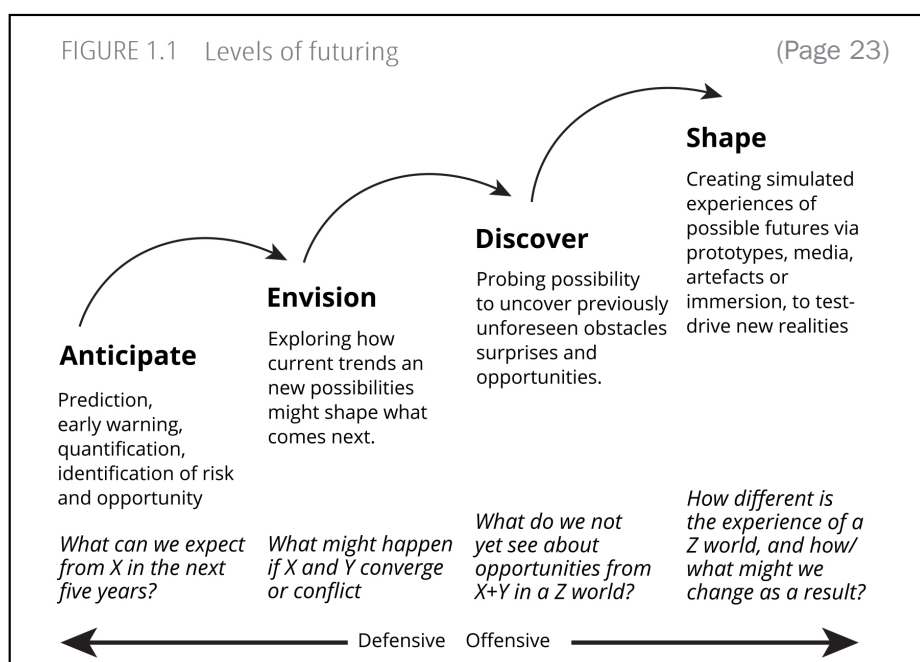
The authors outline their aspiration as "…that what we've written here will be used as a guide and reference for some of the steadily increasing population of people who don't necessarily seek to become expert futurists, but want to be better at thinking about the future themselves." p6).

> People need a motivating vision of what comes next and the awareness that more will happen after that, that the future is a process not a destination. The future is a verb, not a noun. Our minds may reach the ends of their tethers, but we'll never stop futuring" (Bruce Sterling)

Smith and Ashby begin by identifying that there are a variety of different needs for foresight and futuring – from planning family holidays to introducing a new product to a marketplace. They note that each has a different understanding of time (p16), intensity of focus (p18), level of comfort with uncertainty (p19) and different forms and levels of agency (p21). Their model for capturing the different stages of futuring their book explores is this:

FIGURE 1.1   Levels of futuring   (Page 23)

Shape
Creating simulated experiences of possible futures via prototypes, media, artefacts or immersion, to test-drive new realities

Discover
Probing possibility to uncover previously unforeseen obstacles surprises and opportunities.

Envision
Exploring how current trends an new possibilities might shape what comes next.

Anticipate
Prediction, early warning, quantification, identification of risk and opportunity

What can we expect from X in the next five years?

What might happen if X and Y converge or conflict

What do we not yet see about opportunities from X+Y in a Z world?

How different is the experience of a Z world, and how/ what might we change as a result?

Defensive   Offensive

and the majority of the book is devoted to fleshing out these various levels.

Each of the 10 chapters describes the particular set of techniques seen as relevant to that stage of the process, combined with case study examples from work undertaken by the authors on behalf of a wide variety of stakeholders.

The chapters are structured as follows:

Chapter 1 aims to introduce the reader to the first-order issues we encounter when trying to converge around common understandings of futures – namely, the diversity of understandings and mindsets – and explains who we encounter in the world and how we approach the act of futuring.

Chapter 2 sets the frame and establishes proper scope. How do you distinguish this future from another, and what's the most appropriate way to approach the question at hand?

Chapter 3 lays out the formative practice of sensing and scanning, and how to forage for, collect, order and get insight from the signals and information out in the world that tell us something useful about the future.

Chapter 4 presents a range of ways to take the information collected to gain more strategic insight from the whole than can be rung from the parts.

Chapter 5 scales things up, presenting ways to use patterns and emergent themes as building blocks for strategic narratives in the form of different scenario approaches that look for bottom-up threads and stories that come from these patterns.

Chapter 6 turns those flat narratives into rich stories to make these stories more real and accessible. This is where the futures you derive meet other people and debate ensues.

Chapter 7 goes beyond the prototype and provides ways to access reality versus the goals set out at the framing and scoping stage.

Chapter 8 presents thoughts about building a stronger futuring culture inside a large or small organisation whether this is the first or fifteenth futures exploration, a large endeavour or a small experiment. It also discusses ways to stay in full-time futuriing mode while still being able to make ongoing strategic decisions.

Chapters 9 and 10 reflect on the process in its entirety and where it sits in the present world.

Interested readers can check out details of the specific techniques advocated by these authors. Here I would like to emphasise some of the philosophy behind this book – and the philosophy that, I believe, underpins all good futures work. And an effective way to do that is to repeat the following six quotations from various chapters:

> "…there's an inverse relationship between the level of concern or uncertainty about the future and anyone's level of focus on it – if there's too much information, it's too disordered or discordant it just tends to shut us down." (p18)

> "Uncertainty requires space, time and resources to explore, understand and value in a useful way, and makes it very difficult to put a price on and budget for." (p20)

> "Power is in the richness of the conversations and considerations of those engaged together in a future exploration, not inherent in the tools or methods themselves." (p30)

> "Any future we can think of has people at the centre of it." (p46)

> "Futuring is about understanding the landscape of potential futures in such a way as to guide better decision making in the present." (p104)

> *"The point of exploring the future is to better understand how to proceed from the present"* (emphasis in the original) (p164)

Late in the book (p180), Smith recounts a conversation with an executive recruiter who contacted him to identify if he had any interest in being considered for a corporate futurist role. As his interest increased, and the conversation continued, the recruiter asked about his qualifications – in particular asking "how many predictions have you gotten right in the past year?". Smith felt compelled to explain that professional futurists don't predict for a living, and the recruiter rapidly lost interest: "How am I supposed to measure your effectiveness? You can't measure yourself by sales, or products shipped on time, so how do you know when you're doing your job well? How can I tell a good futurist from a bad one?" (p181)

This anecdote accurately summarises the dilemma faced by most foresight practitioners, and it is clear that Smith and Ashby have thought it through extremely well, developing a structured series of techniques designed not only to rigorously explore potential futures, but also to seem credible to those with whom they are working – and perhaps most importantly, to lead clients to useful and usable conclusions. This is a very accessible and readable account of how to future.

FUTURISTS IN ACTION

FORESIGHT AND FORECASTING V DESIGNING FOR UNCERTAINTY

by Paul Higgins

What is the balance between trying to understand what the future might bring and building organisations and networks that can react to change strategically?

Last week I watched a webinar from Good Judgement on the Future of Foresight as I was unable to attend the live event. The webinar was a follow on from an article that Philip Tetlock and Peter Scoblic published in Foreign Affairs entitled "A Better Crystal Ball" The Right Way to Think About the Future.

The article and the webinar were basically around the differences between scenario planning approaches and forecasting approaches and how both schools of thought tend to disparage each other. As a generalisation scenario planners think forecasting specific numbers and probabilities is a fool's errand and forecasters think scenarios are too vague to be useful for policy and decision making.

The premise of the article and the webinar are that you can combine the two approaches in specific circumstances to create an overall strong approach.

The system that is proposed mirrors an approach that I have been using for a few years now but also adds strength to that approach. My process has been:

1. Understand possible future landscapes by using Wardley Maps and Scenario Planning to create multiple possible pictures of the future.

2. Wargame inside those scenarios to look at possible strategy.

3. Extract from the scenarios signposts that will inform you if the picture you have imagined is happening in the real world.

4. Institutionalise the process by creating formal reviews of the signposts at regular board meetings or leadership meetings of the organisation.

The strength that the Tetlock/Scoblic approach adds is the use of probability assessments of the signposts using super forecaster skills. This is especially useful where your strategy requires that you need to act well in advance of the future coming to reality.

I think that this is a great advance for thinking about these issues but misses an important third component.

To illustrate the overall approach Good Judgment presented the following slide:
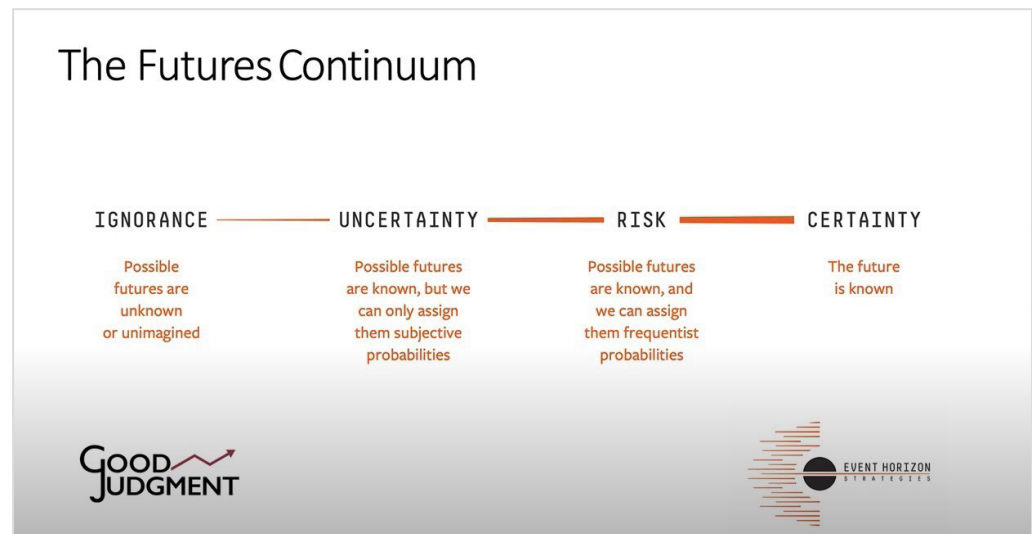
Which I have then annotated as follows:
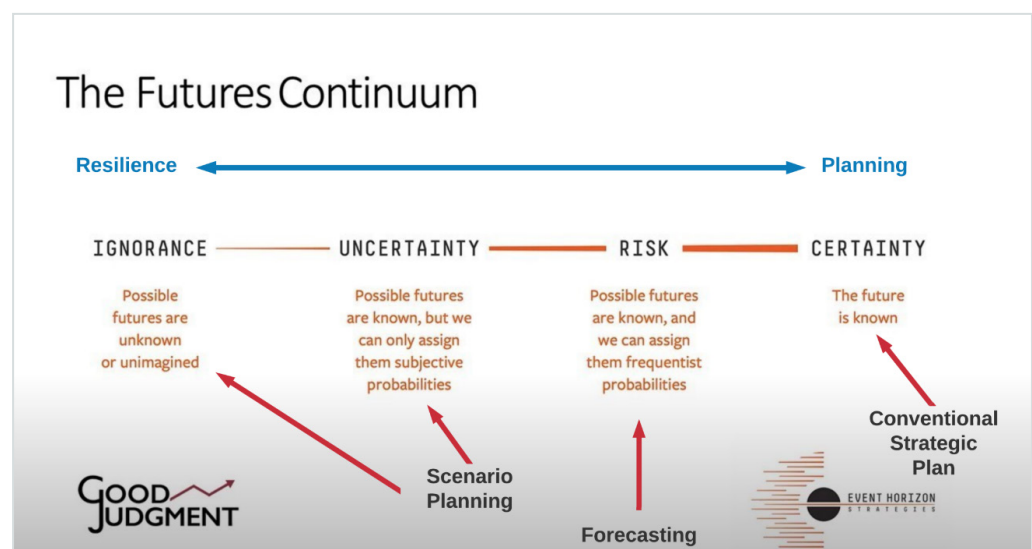
The missing third element is the building of resilient organisations that can flex and change as unanticipated stuff happens. As we move from the right to the left in the Good Judgement Futures Continuum things become more and more uncertain. As things become more uncertain the value of planning falls and the value of organisations and networks that can respond to change rises.

I have written about an example of this in Is radical emergent strategy from the edge the future of foresight and strategy? (a copy of which can be found here:

https://whatsemerging.substack.com/p/is-radical-emergent-strategy-from)

The answer to the question in the title of that article is that planning, forecasting, scenario planning, and building resilient organisations are all useful. The relative value of each depends on the organisation in question and the domain in which they operate.

The proposal from Tetlock and Scoblic strengthens the use of scenario planning and forecasting within the group of tools we should be using.

Signals in the Noise

15 JOB ADS OF THE FUTURE WE CAN'T WAIT TO ADD TO OUR RESUMES

by Thomas Frey

Imagine determining the virtual reality strategy for a whole company. The company's brand is part of the digital world. You have a team made up of a Spatial Creative Director, Psychedelic Taste Tester, and Metamarketers to assess the campaigns. On your lunch breaks, you visit your Brainpower Coach to make sure you're operating at max cognitive capacity. The lines between the physical and digital blur and your job takes you in and out of digital realities. Brands are managed across legacy social media and in the metaverse, floating through the air to our taste buds and making us wonder, how did we ever live without it all?

As more and more jobs depend on technology, we learn that the skills we need today might not be the ones we use tomorrow. Whether you're interested in it for yourself or curious what future generations might do, here are our next set of LinkedIn jobs ads we'll see (in the not too distant) future.
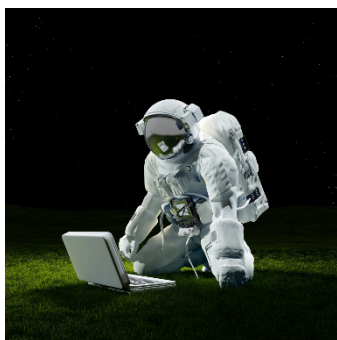
LUNAR FOOD SCIENTIST

Food scientists already exist today. They study food deterioration and processing using microbiology, engineering, and chemistry. Food scientists are then able to determine nutrient levels and food's content. But all that is here on Earth. In space, food works a little differently. For instance, one lunar day lasts approximately 28 Earth days due to the moon's slow spin.

Job Description

It costs a lot of money to transport objects into space. If astronauts could grow food on the moon (or Mars, like in The Martian), they could stay in space longer. One NASA scientist, Max Coleman, is already growing radishes to help astronauts grow food on the moon. Lunar Food Scientists will need a strong foundation in the scientific method, hydroponics, and creativity for experimentation.

EVTOL TECHNICIAN

eVTOL, electric Vertical Take-Off and Landing, is the latest in aerospace design for emergency aircraft, military helicopters, and civilian aircraft. eVTOL vehicles are quieter and cheaper than traditional helicopters. They also run on zero-local-emission electric power which is great for those concerned about air pollution.

Job Description

eVTOL Technicians need a strong background in engineering. For instance to understand the difference between rotors for eVTOL vehicles vs traditional helicopter blades that produce different noise frequencies. Which type of rotor configuration for electric aviation vehicles and how to maintain them will be essential knowledge. Eventually, eVTOL vehicles will be pilotless so technicians need to be able to analyze, troubleshoot, and repair problems remotely.

BRAINPOWER COACH

As AI takes over more of the mundane tasks for humans in work and daily life, it frees our brains to focus on more challenging and creative tasks. While the 10% myth has been debunked (that humans only use 10% of their brain), there are still exercises people can do to impact their brainpower. As we integrate more with technology, brainpower coaches will help us to train our brains to reach their full potential.

Job Description

The brain is an organ like any other in our body. The better we take care of ourselves, the better our brains function. Brainpower coaches will have a mixed skill set of nutritionist, personal trainer, and cognitive processing. They will use tactics like brain training exercises (in one study shown to reduce dementia by 29%) and positive thinking to help clients reach their goals.

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PSYCHEDELIC TASTE TESTER

Taste testers do more than gorge on chocolates all day… ok, they do taste delicious foods but it's what they do with that taste that makes them scientists. Professional taste testers "create computer programs to evaluate products," take part in taste-testing panels, and audit procedures and the production facility for improvements. Taste-testing, like many professions, will need to evolve as technology encroaches on their field.

Job Description

People seek out different experiences that are safer to do with technology like virtual reality. Augmented reality too, will enrich and "psych" out our lives. In the future, AR will do more than augment what we see, it will also affect our taste buds. Psychedelic Taste Testers will be hired by companies looking for a different medium for their brands. Instead of seeing an ad for chocolate cookies, customers could virtually taste the chocolate cookie as they walk by the store. Psychedelic Taste Testers will program taste. They test that food has the same taste consistency as a real cookie, and find the best mechanisms to distribute augmented taste.

Photo by tofayel ahmed on Unsplash

HOLOGRAPHIC LEGACY LAWYER

Holograms of Tubac, Michael Jackson, and Robert Kardashian are examples of celebrities and famous people whose likeness was turned into a hologram. As hologram technology (made available through volumetric video capture) becomes more distributed, holographic legacy lawyers will be needed to manage this different type of estate planning.

Job Description

At this time there are few legal protections of post-mortem rights of individuals. Holographic Lawyers will be part of creating a new field in law, not just representing clients. Holographic Legacy Lawyers will need to determine someone's intent of using a deceased person's likeness, validating their image capture, and deciding what an individual would accept as part of the afterlife before they die.

CHIEF REALITY OFFICER

Virtual reality, augmented reality, the metaverse, spatial computing - the future holds multiple different realities. Companies will no longer be tied to the physical one. In fact, many companies are already dipping their toes into different realities like L'Oreal's virtual makeup line, Gucci's digital clothes, and even political campaign stops in Fortnite. As companies expand into different realities across multiple platforms, they'll need someone to keep track of it all. Enter, the Chief Reality Officer.

Job Description

The Chief Reality Office (CRO) needs a deep understanding of XR (virtual, augmented, and mixed reality). They need to manage the company's brand, vision, and mission across multiple realities. The CRO should have a strategy to place the company in the realities that fit it best while developing business prospects in each reality by studying each reality's economic trends and revenue opportunities.

CHIEF FUTURES OFFICER

As we move into the future, a new emphasis will be put on Futures Intelligence. Companies will have mature business intelligence - looking at and analyzing the past. What they'll need to stay competitive is a view of the future. Futures Intelligence, also known as Strategic Foresight, exists today but as it becomes more essential in the workforce of tomorrow, a new position will be created for this important role.

Job Description

The Chief Futures Officer will set the tone and strategy for anticipating change. They will imagine possible and plausible scenarios that could play out in the near and long term future of the organization. They will create a workplace environment where everyone has an eye out for the future. The CFO will need to assess patterns from the ground floor to the top-level strategy set by the CEO. They will use these patterns, along with where the market is going outside of their company's specific sector, to keep the organization ahead of the competition and valuable long term for their customers.

SPACE TOURISM AGENT

Working in space or for a space travel agency at least is something that people do today. And they don't need to be an astronaut to do it. There are currently 120 accredited space

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agents in the world. But with space travel companies like Virgin Galactic and SpaceX setting their sites on commercial space flights, more Space Tourism Agents will be needed.

Job Description

Since commercial space travel is a ways off, Space Tourism Agents need to prove that a market for spaceflight exists. Space Tourism Agents need to be strong brand ambassadors to keep demand high for limited seats and flights. Space Tourism Agents will do more than book flights. They will ensure their customers are ready for space travel including the necessary on-orbit and ground resources required.

Photo by Greg Rakozy on Unsplash

SPACE MARKETER

Space: the final frontier (as Trekkies say). But is it the final frontier for marketing? As space travel amps up with private companies blasting off into the great unknown, so are space marketing agencies. Companies like Metatron Capital, Cosma Schema, and Gr@vity Marketing, are recreating the meaning of storytelling in space and they need marketers to assist.

Job Description

A Space Marketer needs to be in the know of various space industries. From space tourism, lunar mining, space industrialization, space tourism,

and space junk removal - space marketers need to know their "space" to help companies on Earth find the right product fit in the stars. Space Marketers need to have a solid foundation in marketing with the ability to create new media platforms.

DIGITAL REMOVALIST

The internet and social media have been around long enough that just about anyone has potentially embarrassing posts or photos that they'd no longer like online. As a company's brands change over decades of online presence, they too might want to scrub the past to start fresh. In the age of misinformation, where facts are nebulous, hiring a Digital Removalist can create consistent messaging for a brand.

Job Description

Digital Removalists need a strong understanding of their client's brands, image, and reputation. They require skills to find the original source of content and an understanding of publishing laws. When digital skills fall short, the Digital Removalist uses their people skills to talk to content owners directly to manage content for their brand.

DIGITAL TWIN DOCTOR

The pandemic has finally shifted the market in favor of telehealth, but remote telehealth has a long way to go. As more of our bodies and lives are captured digitally, doctors will need to be able to analyze bodies for health via digital twins - the digital capture of us via sensors. Doctors will be able to see through the different layers of our bodies via our digital twin, so they can spot anything wrong and fix it via digital uploads.

Job Description

Digital Twin Doctors are still medical professionals. They will work with cutting-edge virtual representations of patients to decide optimal treatment regimens and strategies. They need to be comfortable monitoring the digital twin of their patients along with the patient as is in the present.

METAMARKETER

In marketing, it's easy to get bogged down in the data. But every good marker knows that it's the consumer and the stories that inspire them that make good marketing. However, the world is only being filled with more data and humans are becoming data machines. Holographic Legacy Lawyers, Digital Reality Consultants, and Digital Twin Doctors will all need marketing support as their human customers create more data than ever. That's where the Metamarketer comes in.

Job Description

Metamarketers use strategic insights into data collected as well as empathy to create a complete picture of the customer including their genuine needs and interests. Metamarketers focus on data using tools that integrate with the digital technology of the future.

SPATIAL CREATIVE DIRECTOR

Virtual and augmented reality is here. As more brands turn to immersive mediums like virtual and augmented reality and use tools like volumetric video that records people in 3D, they'll need a creative director who understands the new space.

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Job Description

Spatial Creative Directors have the skillset and creativity to "see" in 3D. They understand that media in 3D space can be viewed and interacted with from all angles. Their job will be to guide, nurture, and protect people's ideas as spatial media defines itself as a mainstream medium.

Photo by Icons8 Team on Unsplash

DIGITAL HUMAN CERTIFIED CONVERSATIONALIST

Artificial intelligence is used by businesses and will only be used more so from customer support to addressing employee tickets. AI is used in chatbots on a website to robots on a telephone call. As AI gets better at answering questions with the right information, they need help sounding human to best communicate information. 85% of customer interactions will be handled by a chatbot in 2020 but only 32% of customers think chatbots are friendly and approachable. That's where digital human certified conversationalists come in. In fact, companies like Soul Machines, which develop hyper-realistic digital people, are already hiring people for this role.

Job Description

As a Digital Human Certified Conversationalist, you will need to develop humanoid conversational interfaces. You will need to write with compassion and empathy using conversational best practices. Certified conversationalists will need more than dialog writing skills. They need to develop personas for digital humans to give them their own, unique voice and personality. People from any background are encouraged to become certified conversationalists and varied experiences lend to creating realistic digital humans.

PAIN ENGINEER

Humans, most of us, don't like to be in pain. An entire industry is built around pain management. There are specialists in pain medication, meditation for pain, and alternatives to drugs like virtual reality, to manage pain. The chronic pain treatment market is expected to reach $105.9 billion by 2024. What if there was a job in the future whose goal is to create pain instead of making it go away? That's the job of the pain engineer.

Job Description

Pain Engineers develop scenarios designed to elicit pain to produce the desired behaviour, as it would our ancestors in nature. A Pain Engineer needs to identify dangerous scenarios in the modern world that spark a pain response, like a stovetop left on or malicious links in an email. As a Pain Engineer, you need to work with immersive technology like augmented reality and haptic feedback sensors to alert humans of a dangerous situation and better their lives, through pain.