



Scene from *Her*, the movie - 2013

Technological Tsunami to Change CX

Digital Change is here. Embrace it or Perish

This statement might appear excessive but there has been no period in our history when so many emerging technologies are all finally becoming commercial realities. The convergence of these technologies will create significant commercial opportunities and threats at the same time. A technological tsunami is coming in the next ten years and those not prepared will become victims of irrelevance. Those prepared for the next technological wave will be able to survive and thrive, and will have the opportunity to dominate markets and new industries.

A new survey (June 2015) found business leaders believe four out of ten top-ranked companies in their industries worldwide won't survive the next five years.

They blamed the accelerating change on technology, shifting business models and a need to merge in order to cut costs to ensure they don't become footnotes in someone else's corporate history.

"Not just lone companies, but entire industries are being side-swiped by these effects," said James Macaulay, co-author of the study, which polled 941 business leaders from a dozen industries in the world's 13 biggest economies.

"Digital disruption now has the potential to overturn incumbents and reshape markets faster than perhaps any force in history," the survey states.¹

This paper aims to provide an executive summary on how and why the next technological wave will change the definition of customer experience. It explores the key drivers behind these technological developments to identify the possible impact to customer experience and how this may lead to future competitive advantages.

Which Technologies Are Emerging?

There are a number of technologies that are converging in the next ten years. Most of the technologies referenced in this paper are either in early production or waiting on final approval before widespread distribution. We've narrowed down the technologies we believe will have the greatest impact on customer experience and the competitive landscape of an industry sector. We also indicate where this is all headed by reviewing where some of the leading technological companies were making significant investments. The insights are based on our research on companies such as:

- Google
- Apple
- Microsoft
- Facebook
- Amazon
- Samsung
- SoftBank

At the same time we couldn't ignore some of the emerging companies producing the technologies of the future such as:

- Huis Ten Bosch
- Tesla
- Magic Leap
- Oculus Rift
- SmartThings
- Pembient

¹ The report can be found at <http://bit.ly/1IyV1cK>

- Noble Biomaterials
- Clothing+
- iRobot
- Riken-SRK Collaboration Centre for Human-Interactive Robot Research
- Build It Workspace
- AeroMobil
- Scandu
- Oblong Industries
- ToyTalk
- MemoMi

Some of these companies, such as Google, are investing in a large and diverse range of technologies. We have identified the technologies where the largest investments were being made by these companies and then evaluated the potential to change the customer experience the most. The following technologies are of particular relevance:

- Robots
- Robotic automation
- Artificial intelligence used for predictive solutions
- Internet of Things (IoT)
- 3-D printing
- Self-driving vehicles
- Smart Clothing
- Contextual applications using technology such as facial recognition
- Flying cars (pictured)
- Augmented/Virtual Reality applications
- Smart displays such as Memory Mirror



Many of these technologies are being turned into effective disruptive tools through the application of multiple independent technologies. For example, self-driving cars are only recently in testing phase by companies such as Google because of the advancement of multiple complementary technologies such as advanced driver assistance systems (ADAS), sensors, cameras,

GPS tracking, and robotics. The evolution in development of these minor technologies has enabled companies to assemble new technological solutions capable of changing the way we live and interact with one another.

This is disruption, and in many cases it's closer to becoming a commercial reality than most people realise. We will provide examples later in this paper of several products and services developed by the noted companies, and the stages of commercialisation.

Transforming the Concept of Customer Experience

The research undertaken indicates a change in attitude towards customer experience concepts. Traditionally, CX is defined in terms of customer expectations and values; how a company can provide a branded experience along the entire customer journey and at every touch point that generates loyalty and advocacy.

The more impressive technology companies had a slightly different view of how to create long-term loyalty with their customers. They were less focused on the transactional aspects of Customer Experience (CX) management and more interested in providing a solution that will enhance the customer's life experience (LX).

The key difference is the shift in approach away from consumerism and towards creating demand for life enhancing products and services that genuinely enhance and elevate a person's life. The goal is to help a person define their very *raison d'être*, and deliver greater life satisfaction and a sense of accomplishment. Some of these companies are focused on higher humanitarian objectives such as improved learning and development, better healthcare, electricity in regional locations, and better support for those who are physically challenged.

These pioneering organisations are driven by the insight that the next technological wave will impact almost every aspect of our lives. Therefore it will no longer be sufficient to manage the relationship between the customer and the company through interactions, and the company's products and services. This approach will be too limiting since it largely examines the customer and their relationship with the company in isolation to the outside world.

The proliferation of technology in almost every aspect of our lives will require companies of the future to define their offering to people relative to a larger ecosystem of life-enhancing technologies. Their view of the customer will incorporate how their customer functions on a daily basis, interacting with different technologies to ultimately improve their life. The shift towards life experience management will be the main focus for organisations delivering the technological solutions that will change our lives in the future.

Beyond Traditional Disruptive Technology

Disruption brought on by technology in markets and industry sectors is not new. People have been innovating and creating

disruption since the dawn of time. Just think of how the discovery of electricity by Edison changed the way we live and opened the doorway for life changing technologies such as the light bulb, elevator, movie camera, and ultimately, computers.

Disruptive technology can be grouped into four (4) key categories. These categories are not based on historical evolution but rather the impact of the technology on people's lives. The categories are as follows:

1. ***Productivity Technology*** which helps us by reducing inefficiencies and the number of dull and menial tasks we have to do on a daily basis
2. ***Health Enhancement Technology*** that reduces risks to our health and wellbeing
3. ***Control Technology*** to facilitate the manipulation of our surroundings with minimal effort and greater capability
4. ***Human Aspirations Technology*** enhancing our existence as human beings by addressing a fundamental human aspiration through technology

Electricity, for example led to the invention of the motion camera. The motion camera led to the evolution of cinema. A movie in a dark theatre taps into the human psyche related to dreaming. Whilst we don't fully yet understand the impact of why humans dream we do know that every human does it and therefore it plays an important part in who we are as humans. This technological invention enabled us to "share a dream" with others and explore human emotions such as love and fear. Therefore this technological invention can be grouped in the fourth category, enhancing our existence as human beings.

Many of the disruptive technologies we have seen in the past fifty years can be grouped into the first 3 categories. The disruption they created is largely utilitarian in nature. A particular aspect of our lives changed us in a specific manner, such as the development of large cranes enabled us to build tall buildings. In a more recent example, Uber enables us to be more productive and in control when we need ground transportation.

The next technological wave will bring an unprecedented number of technologies focused beyond addressing simple utilitarian issues, towards enhancing our lives by tapping into deep psychological and emotional needs.

Companies like Magic Leap are working on "bringing back magic into the world". Their commercial release of the technology is supposedly ground-breaking. Although details are scarce, we do know that Google is investing heavily in them by leading a capital raising of US \$542M for the start-up. Magic Leap is said to be working on augmented reality glasses that can place created digital objects in your vision so they appear to exist in the world around you (pictured right). According to The Wall Street Journal, Magic Leap's technology currently operates like a pair of glasses, however instead of displaying images onto the inside of the glasses or projecting the images outward, Magic Leap's glasses reportedly project their image right onto the wearer's eyes — creating stunning effects. A user reported that the experience "was incredibly natural and almost jarring — you're in the room, and there's a dragon flying around, it's jaw-dropping and I couldn't get the smile off of my face," (Thomas Tull, CEO of Legendary Pictures, The Wall Street Journal).

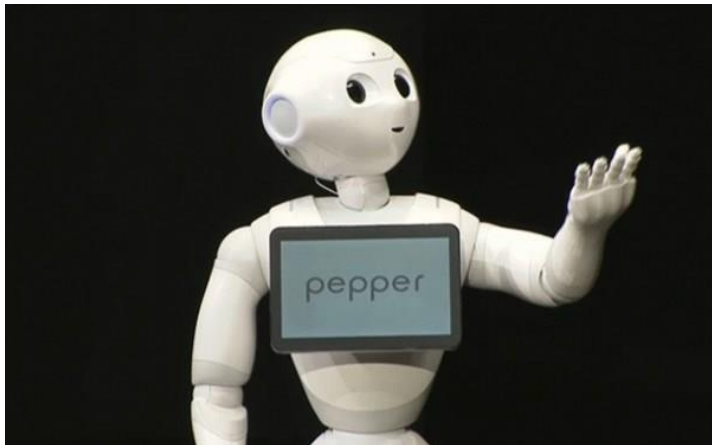


The human fascination with magic and wondrous experiences enables Magic Leap to tap into all sorts of possibilities related to higher and deeper engagement of users, and potentially "positively transform the process of education." Another recent invention saw a robot called "Pepper" released by Softbank in Japan. Pepper is claimed to be the world's first robot able to intuit human emotions by sensing changes in voice and facial expressions. Furthermore, Pepper has its own emotions (a feature that's been added since the robot was initially announced).

Lots of robots are being developed as an "emotional companion", especially for children, the elderly, and hospital patients. Pepper's only purpose is to be your robot buddy, and was specifically created to keep people company. This is particularly important in Japan which has the fastest-aging population in the world. Technological inventions such as Pepper are being released to enhance the lives of many people, by providing a synthetic companion that is able to help people overcome loneliness and despair.

SoftBank Robotics Corp, which created Pepper, says the robot has one overriding aim: "He tries to make you happy." Pepper also addresses the parental urge of being needed through the ability of the robot to express its own "emotional" need for companionship.

Pepper (pictured below) had a limited release in Japan on the 20th of June, 2015. The initial 1,000 units had a retail price of US\$1,610 upfront plus maintenance contracts for another three years taking the total cost to US \$9,380. The robots were sold out in one minute.



It appears there is a large appetite for technologies that have the potential to improve our lives as human beings rather than simply enhance a single aspect of our lives. The underlying urge to have a better life is different in all individuals. Some may experience a strong urge to better their living conditions whilst others may seek more altruistic urges to help mankind. Technology companies are starting to tap into the life experiences desired by people to create life changing technology solutions. This will see the evolution of traditional customer experience thinking shift towards “whole of life” experience management.

People Expectations & Values Are Changing Around Time & Emotional Payback

The evolution of people’s expectations and values is largely driven by their environment, their upbringing, and major life changing events. The on-demand generation is living a digital life with different expectations to previous generations, such as how long it should take to get an answer to a question,

buy a product, or receive a service. The technologies of the current period have focused on increasing our productivity, making us more efficient and giving us more control over our world. Consequently these technologies have created a world where time is effectively shrinking.

Everything in our world is now taking less time to perform. It takes us less time to do the shopping, find a tradesperson, book a flight overseas, measure our fitness, and pay our bills. The reduction of effort in performing many everyday tasks means that we now have a generation of people with different expectations around time. Mundane tasks are no longer a concern and can be managed by technological solutions.

Technology, used in business, is also likely to elevate the types of tasks performed by workers. Time at work will be more focused on managing more complex tasks with the aid of technology rather than performing menial administrative or repetitive tasks. The primary aim of the coming wave of technology will be to improve the lives of people by eradicating negative emotions associated with repetitive, menial tasks and dangerous or unhealthy practices. The by-product of these solutions will be to create more free time to enable people to focus on a higher quality of life. There will be a stronger focus on the emotional payback offered by these technologies. Just as depicted in the movie *Her*, we will begin to form “artificial” relationships with our technologies to receive an emotional payback.

Value Creation around Pleasure and More Time

The upcoming technologies we examined aim to provide the user with a valuable life experience by delivering more pleasure and


'spare' time. Pleasure can be grouped under many categories. A person can derive pleasure by knowing that their favourite climate settings and lighting are set the minute they walk into their house. Others can derive pleasure from knowing they have been able to help someone less fortunate than themselves. The use of a technology to provide appropriate and sustainable pleasure will determine the level of value created for the user and ultimately its usefulness in the user's digital world.



To assess the value offered by a product or service, a new type of measurement is needed which relates to how much pleasure and free time is generated by a product or service, and the potential to repeat the experience for the user on an ongoing basis. As with traditional customer experience management best practices, we also need to take into consideration the cultural, ethnic and demographic differences of each market.


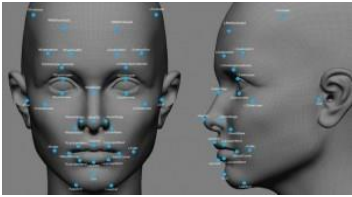
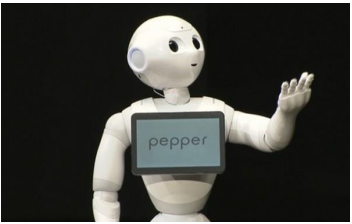

These technological solutions need to eradicate negative emotions experienced by people in their daily lives in order to create more pleasure and free time for them. The key negative emotions targeted in the next wave of technological innovation are identified as:






- Anger
- Frustration
- Loneliness
- Despair
- Fear
- Insecurity
- Instability
- Boredom




Outlined below is our evaluation of how some of these technologies may impact people's lives and how they will create new value attempting to eradicate negative emotions and replace them with positive emotions:





Company	Technology Solution	Negative Emotions Targeted for Eradication	Positive Emotions Targeted for Creation
<p>Google</p> 	<p>Google is the most diversified. They have a large range of patents from emotional expressive toys to downloadable personalities for robots. Their current investments are focused around three main areas:</p> <ol style="list-style-type: none"> 1. Google self-driving car 2. Augmented reality for future computing and gaming 3. Artificial Intelligence and Robotics for a range of applications 	<p>Frustration</p> <p>Boredom</p> <p>Fear</p> <p>Instability</p> <p>Anxious</p> <p>Laziness</p> <p>Procrastination</p>	<p>Joy</p> <p>Serenity</p> <p>Interest</p> <p>Amusement</p> <p>Safety</p>



<p>Apple</p> 	<p>Apple is investing in the Internet of Things (IoT). Their recent move into tech wearables such as the iWatch will lead them down the path of providing consumers with more smart devices that will seamlessly connect to the Apple ecosystem. iBeacon is an example of an IoT business application able to provide hyper-contextual content to customers.</p> <p>Additional areas of investment include:</p> <ol style="list-style-type: none"> 1. iCar – self-driving car code named “Titan” 2. Advanced forms of Siri to perform robotic automation of household processes such as climate adjustment 	<p>Boredom</p> <p>Disconnected</p> <p>Isolated</p> <p>Repressed</p> <p>Rejected</p>	<p>Desire</p> <p>Pride</p> <p>Confidence</p> <p>Connected</p>
<p>Microsoft</p> 	<p>Microsoft has evolved from an operating system provider to creating an “open” platform for developers to build applications for. Windows 10 is the Company’s final attempt to remain relevant as a tech company.</p> <p>It is betting on the next computing evolution with what they term as “holographic computing” via their user interface called HoloLens.</p> <p>Microsoft’s recent the US\$1 billion investment in Uber indicates its survival strategy is hedged on the success of other tech companies. Uber could also be an indirect investment into self-driving vehicles and also to utilise Microsoft’s Azure cloud computing platform.</p>	<p>Chaotic</p> <p>Confused</p> <p>Hopeless</p> <p>Uninformed</p> <p>Lost</p> <p>Boredom</p>	<p>Confidence</p> <p>Inspiration</p> <p>Satisfaction</p>
<p>Amazon</p>	<p>Amazon is continuing to invest in technologies of the future in the way customers shop online. It is also investing in becoming the infrastructure powerhouse for the IT industry by expanding and providing new solutions around</p>	<p>Manipulative</p> <p>Uninformed</p> <p>Frustration</p> <p>Controlling</p>	<p>Serenity</p> <p>Relief</p> <p>Satisfaction</p> <p>Confidence</p>

	<p>data centres and cloud offerings. Recent technology releases include</p> <ul style="list-style-type: none"> • Echo (Amazon's voice-activated, cloud-connected wireless speaker, who talks back to you and acts as kind of a personal assistant.) • Fire Phone • Dash Replenishment Service (one button push to buy products –pictured left) 	Disadvantaged	Pride
<p>Facebook</p> 	<p>Facebook is investing in:</p> <ul style="list-style-type: none"> • Facial recognition solutions • Virtual reality applications and gaming as with their acquisition of Oculus Rift 	Loneliness Isolated Insecure Insensitive	Love Kindness Admiration Fascination
<p>SoftBank</p> 	<p>Softbank released Pepper the robot on the 20th of June, 2015. This is the emotion sensing robot that is designed to make you happy</p>	Loneliness Depression	Kindness Sympathy Love
<p>Huis Ten Bosch</p> 	<p>This company launched the first hotel to be fully operated by robots in July 2015, based in Japan. Humanoid robots greet Japanese-speaking guests at reception, while English-speaking guests are met, for reasons that aren't exactly clear, by a robotic dinosaur.</p> <p>The robots are said to be able to engage in intelligent conversations.</p> <p>More functional droids are on hand to cart luggage to the hotel's 72 rooms, staff luggage lockers and clean.</p>	Poor Complaining Neglected Dominated	Relief Relaxation Surprise

<p>Tesla</p> 	<p>Electric motor vehicle company that is also becoming an energy company able to provide new and improved ways of battery storage of electricity.</p>	<p>Egocentric Arrogance Self-obsessed</p>	<p>Confidence Courage Satisfaction</p>
<p>Magic Leap</p> 	<p>Magic Leap's technology currently uses something like a pair of glasses, according to The Wall Street Journal.</p> <p>Rather than displaying images on the glasses or projecting them out into the world, Magic Leap's glasses reportedly project their image right onto their wearer's eyes — creating stunning effects.</p>	<p>Unhappy Bored Controlled Reclusive</p>	<p>Enchantment Fascination Awe Amusement</p>
<p>Oculus</p> 	<p>Oculus produces a range of virtual reality wearables able to provide a much improved high presence experience to engage the user more completely than previous devices.</p> <p>Their gear utilises a gaming platform (DK2), wearable glasses (Rift) and a device to turn Samsung phones into a mobile VR system (Gear VR)</p>	<p>Bored Bullied Lost Timid</p>	<p>Energised Inspired Fascination Confident</p>
<p>SmartThings</p> 	<p>SmartThings produces software that helps control everything from door locks to light switches in homes. The company was acquired by Samsung for US\$200 million.</p>	<p>Impatient Disorganised Disconnected</p>	<p>Connected Relaxation Confidence</p>
<p>Pembient</p> 	<p>This is a biotech firm that uses 3D printing technology to produce synthetic organic material. The San Francisco start-up was recently in the news for plans to flood the Chinese market with the synthetic rhino horns which carry the same genetic fingerprint as horns from rhinos.</p> <p>The firm uses keratin and rhino DNA to produce a dried powder which is</p>	<p>Victimized Condemned Defeated Destructive Environmentally Irresponsible</p>	<p>Inspiration Confident Empowered Pride Environmentally Responsible</p>

	then 3D printed to look similar to original horns.		
Noble Biomaterials 	<p>Noble produces CircuiteX technology, which creates the conductive components in smart garments which ultimately allow for the detection, transmission and protection of electrical signals within smart clothing. When incorporated into a piece of clothing, like a sports bra or a pair of underwear, the clothing itself effectively becomes a sensor.</p>	<p>Lost</p> <p>Uninformed</p> <p>Condemned</p> <p>Defeated</p>	<p>Empowered</p> <p>Confident</p> <p>Relief</p> <p>Secure</p>
Clothing+ 	<p>Clothing + has been recognised over the past 17 years as the world's largest developer and manufacturer of sensor underwear and textile sensor accessories. Sensors are built directly into the clothing enabling large amounts of data to be collected effortlessly.</p> <p>Their technology translates into virtually any garment application so the scope of the product line is restricted only by the imagination and ingenuity of engineers and designers.</p>	<p>Uninformed</p> <p>Detached</p> <p>Insecure</p> <p>Hopeless</p> <p>Chaos</p>	<p>Confident</p> <p>Secure</p> <p>Relief</p> <p>Hope</p>
iRobot 	<p>iRobot offers robots for business and the defence and security industries. Its home robots are revolutionizing the way individuals clean their living and working spaces.</p> <p>Its RP-VITA, a roving communications protocol, allows a doctor to visit a patient without leaving his or her office, thus facilitating more doctor-patient face-time.</p>	<p>Dependent</p> <p>Desperate</p> <p>Annoyed</p> <p>Frustrated</p>	<p>Independence</p> <p>Relaxation</p> <p>Joy</p>

<p>Riken-SRK Collaboration Centre for Human- Interactive Robot Research</p> 	<p>Produced Robear: a high-tech “Robot teddy with a mission” helps care of the elderly in the future.</p> <p>Robear is designed to perform tasks such as helping elderly patients stand up, or lifting them from a bed into a wheelchair.</p>	<p>Lonely Dependent Victimised</p>	<p>Kindness Respect Independent</p>
<p>AeroMobil</p> 	<p>AeroMobil 3.0 prototype is a flying car. The company has been flight-testing its hybrid transportation option in real conditions since earlier this year. It anticipates a commercial launch in 2017. The new model is reportedly capable of taking flight from a grass strip.</p>	<p>Anger Frustration Trapped Rage</p>	<p>Joy Freedom Confidence Relief</p>
<p>Scandu</p> 	<p>Scandu has come up with a pill sensor that can offer ECG readings, heart rate measurements, temperature, blood pressure and oxygen levels once ingested by the patient.</p>	<p>Anxious Stricken</p>	<p>Relief Hope</p>
<p>Oblong Industries</p> 	<p>Mezzanine is a visual collaboration solution that links locations, teams, content, and devices in an immersive, shared workspace.</p> <p>Every participant in a Mezzanine session—whether local or remote—can display information to aid the decision-making process. Sharing data in real time enables teams the ability to make faster, and more informed decisions.</p>	<p>Secretive Disconnected Untrusting</p>	<p>Inspiration Connected Confidence Trust</p>

<p>ToyTalk</p> 	<p>ToyTalk creates conversational characters for children. ToyTalk already produces popular animated conversational apps — among them the Winston Show and SpeakaZoo — which encourages young children to engage in complex dialogue with a menagerie of make-believe characters.</p> <p>Mattel plans to introduce Hello Barbie, a Wi-Fi enabled version of the iconic doll, which uses ToyTalk’s system to analyse a child’s speech and produce relevant responses.</p>	<p>Bored</p> <p>Shy</p> <p>Lonely</p> <p>Insecure</p>	<p>Joy</p> <p>Amusement</p> <p>Fascination</p> <p>Confidence</p>
<p>MemoMi</p> 	<p>MemoMi, in collaboration with Neiman Marcus, have built the Memory Mirror. This new technology has transformed the customer experience. It is a giant video screen and camera that allows shoppers to view outfits from 360 degrees, and also compare clothing options side-by-side. What’s more, it also remembers what customers have already tried on.</p> <p>The mirror records an eight-second video, which is password protected and can be emailed so shoppers can instantly see and share the results from their own personal devices.</p>	<p>Impulsive</p> <p>Confused</p> <p>Conflicted</p> <p>Manipulated</p>	<p>Empowered</p> <p>Pride</p> <p>Desire</p> <p>Relief</p>

Whole is Greater than the Sum of its Parts

As outlined in this paper, our research indicates that a key characteristic of the upcoming technology wave is the imminent maturity of a number of technologies and the convergence of these technologies to create new disruptive solutions. Some of the technologies that are helping define this coming wave are outlined below:

1. **Artificial intelligence** has taken major leaps in recent years. Google has made significant investments in this area including



hiring two of the big hitters in the field; Ray Kurzweil and Professor Geoffrey Hinton. Professor Hinton is working on a concept called “thought vectors”. The underlying idea behind thought vectors is that by ascribing every word a set of numbers (or vector), a computer can be trained to understand the actual meaning of these words. The result would be for a computer arriving at a meaning for words more closely resembling our

own. The evolution in AI is the basis for many of the technology solutions we are seeing such as conversational robots and complex problem-solving machines.

2. **Big Data** is not a technology in its own right, but the diversity and richness of data sets is the underlying basis driving predictive technologies and contextual solutions.
3. **Smart Textiles & Materials** are opening up new possibilities for wearables, automobiles and the future of our everyday clothing.
4. **Cloud Computing** has removed the tendency of hardware to become a barrier for technology solutions. The maturity of cloud computing is enabling companies to control the "smarts" in their devices and create new disruptive solutions. For example, Pepper the robot and Amazon's Echo all have their intelligence based in the cloud.
5. **Sensors, Facial Recognition and Speech Analytics** are all driving the Internet of Things and the commercialisation of smart home devices. Facial recognition and speech analytics technologies are all necessary to enable facial glances and speech to be recognised by devices in order to process the correct action or response.
6. **Broadband speed, reliability and coverage** is the fundamental requirement for all of these technologies to reach commercial viability. Companies like Google know this and have invested significant funds preparing for the upcoming technological wave. Google has invested an estimated US\$1 billion in a company called SpaceX. This company

launches low orbit satellites that can beam low-cost internet around the world.



The unique combination of these individual technologies creates a disruptive

solution which is going to impact numerous industries and their relationship with customers. Some of the companies behind the technologies outlined in this paper have the opportunity to increase their market size, revenues and customer base substantially and become a megacorporation. Hopefully we won't see the type of megacorporation portrayed in the Pixar movie *Wall-E* that dominated most of Earth's economy and governments before Earth's (fictional) demise.

Industries Most Affected

Some industries will be impacted more than others by this technological wave. Few will escape the impact but some industries are particularly susceptible for major disruption. The industries most affected will be the ones where there is currently the greatest effort, investment and innovation in the incorporation of disruptive solutions. The most impacted industries are likely to be:

- Retail
- Health/Aged Care
- Automotive
- Postal, freight and courier services
- Financial Services
- IT/Telecommunications
- Hospitality & Travel
- Domestic Services
- Small Appliances Manufacturing
- Defence Forces

The industries we expect to become significant within the next generation include the following:

- Augmented/Virtual Reality
- Robotics
- AI
- Personal Aviation (jet packs and flying cars)

Caution & Adoption of Future Technologies

This paper has outlined the technologies appearing on the near horizon. It has provided a snapshot of the companies working on commercial releases of technologies that have the potential to have the greatest impact on our lives. Essentially we have highlighted the evolution of “customer experience” to “life experience” as the primary focus for companies aiming to become the megacorporations of the future.

The impact on individuals doesn't come without its dangers, particularly with the evolution of Artificial Intelligence (AI). Renowned thought leaders in the technology industry such as Stephen Hawking, Bill Gates and Elon Musk, warn of the dangers of a “technological singularity”; the point at which artificial intelligence exceeds man's intellectual capacity and produces a runaway effect. Whilst it may be some time away before an apocalyptic army of robots overcomes the human race, as depicted in movies like *iRobot* or *The Terminator*, there is still real concern about the moral, legal and ethical limits and boundaries for such potentially powerful technologies like AI. Governments will need to introduce legislation to control the release of AI technologies and any technology that may be used to harm humanity. Recently the US Congress effectively shut down a research laboratory that had discovered how the Ebola virus could be spread without being airborne by using new research technology. It was said

that the research could lead to the weaponisation of the virus for warfare if it got into the wrong hands.

What Next?

The evolution of technology and its application in our daily lives is also a reflection of the evolution of mankind. Our sense of wonder and excitement about the possibility of living in a futuristic utopia like *The Jetsons* drives us to invent new solutions to make our lives easier. The rise of robots shouldn't be seen as the beginning of the end. Instead, we should view the possibilities these robots can offer to change our lives for the better. As our companions in business and pleasure, they can reduce the cognitive ‘heavy lifting’ required in problem solving, reduce menial tasks, and at the same time, increase the amount of time we have for creative pursuits and personal aspirations.

The future wave of technology will bring an exciting array of possibilities and risks. Our ability to adapt as humans, as a business, and as a community will determine whether there is a consequential long-term enhancement or detriment to our lives.

The Fine Print

Kinetic has not previously and does not currently invest in any of the companies researched, nor was it paid any money, to mention the organisations, their products or their services in this paper.

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