MARSH

Economy 4.0: Risk Evolution and Revolution in the Age of Disruption

CONTENTS

UNDERSTANDING CHANGING AND NEW RISKS IN THE AGE OF DISRUPTION

INTRODUCTION

It is undeniable that the world around us is constantly changing and the risks that organisations and society face are evolving at a transformational pace. Some analysts point to us living in the age of "VUCA": volatility, uncertainty, complexity, and ambiguity. While VUCA can refer to the wider socio-economic climate, the rapid transformation of technology, and the emergence of the digital economy driven by communication, media, and technology (CMT) companies and their business models, have contributed significantly. These pioneering business models, such as the increased use of on-demand or contingent workers, online marketplace platforms, the utilisation of big data, and the redefinition of asset allocation and use, have brought the age of VUCA to the boardroom.

Today, the new business models disrupting the economy across all sectors are characterised by economic and social activity predominantly involving online transactions as well as peer-to-peer access to goods and services via digital marketplaces. The flow of goods, services, and people is easier and faster than ever before, meaning that companies' risk landscapes are at the most dynamic that they have ever been. We are living in Economy 4.0.

Organisations must consider how they actively manage these new and dynamic risks that are a product of this new economic and digital era. This paper explores the opportunities created by new business models, the potential pitfalls that have emerged, and areas of risk management that all organisations – particularly those in the CMT industry sectors – should consider.

BOARDROOM DISCUSSION

Is your organisation ready for Economy 4.0?

Traditional risk analysis, assumptions, management, and mitigation are increasingly losing relevance, as VUCA continues to drive vast changes in business models, risk exposures, and socio-economic climates. These are challenges that boards must address to ensure they are ready to seize the opportunities of Economy 4.0.

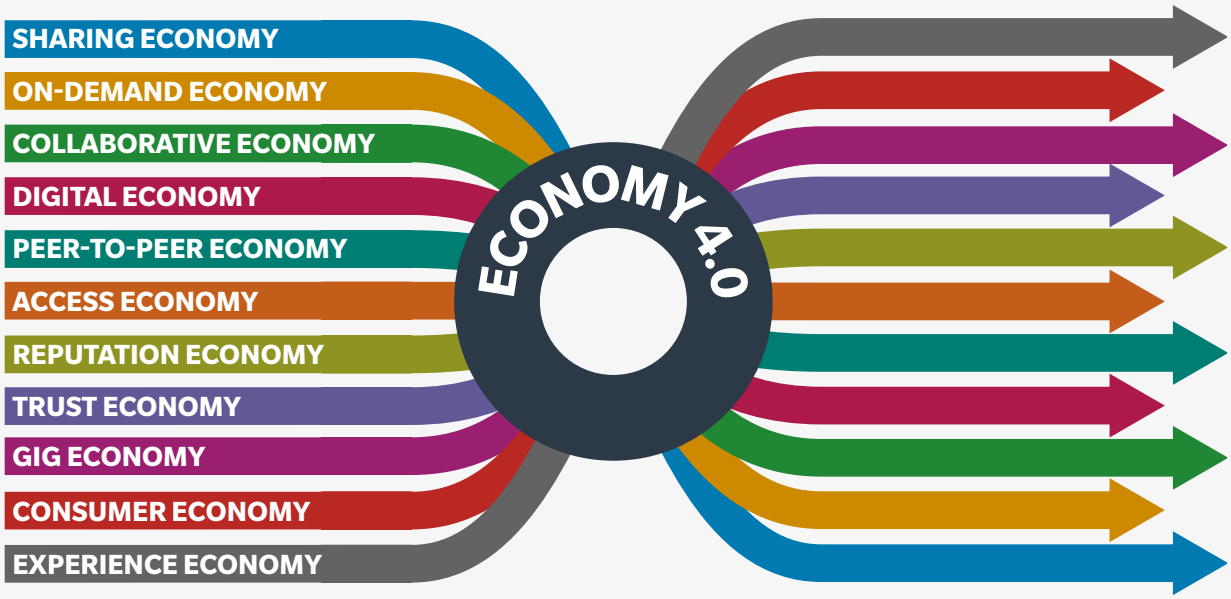
Risk management discussion

For those responsible for risk management, these disruptions present significant opportunities and challenges; both in the way traditional risks are evolving, while at the same time new ones are being created. And beyond this, there is ongoing development in the ways in which risks can be identified, avoided, mitigated or transferred. We predict the realms of traditional risk management will be expanded and those responsible will have a great opportunity to transform or extend the function into an opportunity enabler.

UNDERSTANDING ECONOMY 4.0

The changing workplace and new emerging business models have been described in many different ways; however, no definition encompasses all aspects. For this reason, we refer to Economy 4.0 to include all descriptions listed in Figure 1.

FIGURE 1 What Is Economy 4.0?
Source: Marsh



Economy 4.0 is focused on offering consumer-centric experiences, unlocking value to empower end users (businesses and individuals), and maximising underutilised tangible and intangible assets by creating global marketplaces of trust, supported by huge amounts of data. In addition, it connects idle capacity with demand, prioritises access over ownership, offers collaborative forms of consumption, and drives emotional connections to consumers' experiences. While Economy 4.0 touches every industry, we specifically see the emergence of the following services in the CMT sector, which is predicted to expand by nearly 1,200% by 2025[1]:

FIGURE 2 Opportunities of Economy 4.0
Source: Marsh

Traditional risk analysis, assumptions, management, and mitigation are increasingly losing relevance to many organisations as they become more and more aligned and integrated into Economy 4.0. Companies that do not understand the risks they face will jeopardise their reputations with their customers and potentially become unable to serve them, while facing and creating a changing risk landscape for themselves.

FIGURE 3 **Economy 4.0 Risks**
Source: Marsh

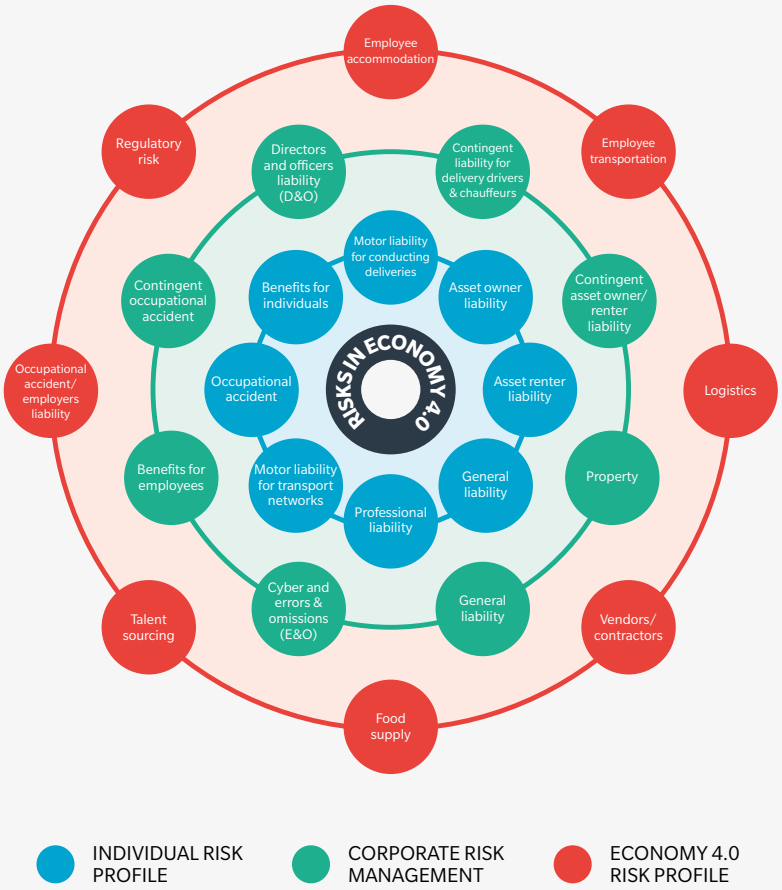


Figure 3 demonstrates how the realms of the corporate, the employee, and external parties are being merged together to create new risks and transform traditional ones.

Economy 4.0 connects idle capacity with demand, prioritises access over ownership, offers collaborative forms of consumption, and drives emotional connections to consumers' experiences.

[1] PWC. *The Sharing Economy Grows Up*, available at https://www.pwc.co.uk/issues/megatrends/collisions/sharingeconomy/outlook-for-the-sharing-economy-in-the-uk-2016.html, accessed on 20 September 2017.

HOW IS ECONOMY 4.0 CHANGING YOUR ORGANISATION'S RISK LANDSCAPE?

PEOPLE RISK

The rapid rise of technology has led to some pointing to the supremacy of AI and robotic workers in the organisations of the future. While these phenomena undoubtedly have had an impact, and will continue to do so in the future, we believe that people will still be one of the core assets of an Economy 4.0 organisation. However, these people will be increasingly autonomous, have multiple employers, and define the work they complete. This creates several risks for an organisation.

SPOTLIGHT

Good work: the Taylor review of modern working practices

In July 2017, the Department for Business, Energy, & Industrial Strategy of the UK Government published *Good work: the Taylor review of modern working practices,* which looked into modern working practices and was led by Matthew Taylor, the chief executive of the Royal Society of Arts.

The report considered the implications of new working practices on employees and employers, and set out several principles in relation to these new practices. It called for clearer status definition of workers by introducing a new category of 'Dependent Contractors' and an assurance that those working through platforms are adequately protected. It also highlighted the opportunities for new technology to give rise to "smarter regulation, more flexible entitlements and new ways for people to organise".

AN EVER-CHANGING EMPLOYEE BASE

The employee base will be in a constant state of flux. To some extent this is already the case as staff levels constantly change throughout the year, however, in Economy 4.0, staff will be able to be 'hired' and 'dismissed' on a minute-by–minute, or job-by-job, basis.

For example, a transport network company will have a different number of drivers globally every minute of the day, who all work different patterns and may also be contracted to other transport network companies, including its competitors. Understanding where workers are, their activities, and where their employment begins and ends will be a major challenge in terms of risk management for companies. As a result of this flux, annual policies need to be redefined to more variable structures. Additionally, the way in which employers liability is rated could change from employee numbers and turnover to the number of minutes worked or distances travelled by contractors in the case of transportation, for example.

NEW CATEGORIES OF WORK AND WORKERS

Defining who is an employee and who is a contractor has already entered the political arena, following a decision by the UK Government to conduct a report into self-employment and the gig economy and the publication of the Taylor Review[2]. The legal definition of individuals who carry out tasks on behalf of an organisation has an impact on its risk management. Many test cases have been tried in the courts, for example, in October 2016, a tribunal ruled that drivers for transport network company Uber should be considered 'workers' and not 'self-employed'. In the UK contractors change from a self-employed to worker status, organisations need to provide more rights to their workers such as paid holiday and the minimum wage. This changes the liabilities of the employers, and will have an impact on their business models and revenues. In a study conducted by the Chartered Institute of Personnel and Development (CIPD), employers stated that they changed their working practices to avoid using agency workers for more than 12 weeks, as once they surpassed this threshold the costs of employing them would be increased[3].

As the Government continues to grapple with deciding how best to treat workers in the Economy 4.0 age, including the creation of a new category of "dependent contractor"[4], organisations must ensure that they are correctly providing the adequate and legal protections that these workers are entitled to.

WHO IS ULTIMATELY RESPONSIBLE?

Economy 4.0 also raises questions as to who should bear responsibility for workers' actions. As self-employed contractors, workers still have the right to protection for their health and safety, but the individual contractor would be assumed to ensure that they have put in place adequate measures to insure themselves. For example, where freelance professional advice is given, the individual would be responsible for their own professional indemnity insurance.

"Many workers within the Economy 4.0 sector do not work core hours for any one organisation or within just one sector. It is important to understand the scope of their activities and which cover is appropriate for them. Economy 4.0 businesses will need to consider how broad and flexible they are prepared for any employee insurance scheme endorsed by them to be, given it could also allow workers to engage with their competitors."

JEREMY GOODACRE
MARSH AFFINITY

[2] Department for Business, Energy & Industrial Strategy. *Good Work: The Taylor Review of Modern Working Practices,* available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/627671/good-work-taylor-review-modern-working-practices-rg.pdf, accessed on 5 September 2017.

[3] Chartered Instutute of Personnel Development. *Future World of Work*, available at https://www.cipd.co.uk/Images/cipd_submission_to_beis_select_committee_on_future_of_work_final_minus_data_tcm18-17693.pdf, accessed on 5 September 2017.

[4] *Good work: the Taylor review of modern working practices.*

However, organisations may have a responsibility to educate their contractors as to which coverage they need and the specific risks they must manage. Increasingly, as the line between personal life and work life blurs for the individual, new insurance and risk management products will be developed to support the Economy 4.0 lifestyle. Those organisations that are moving into a more contracted working relationship with their workers, rather than one based on having employees, should be considering what advice they provide and how their reputation may be damaged in the event of a mistake by the worker.

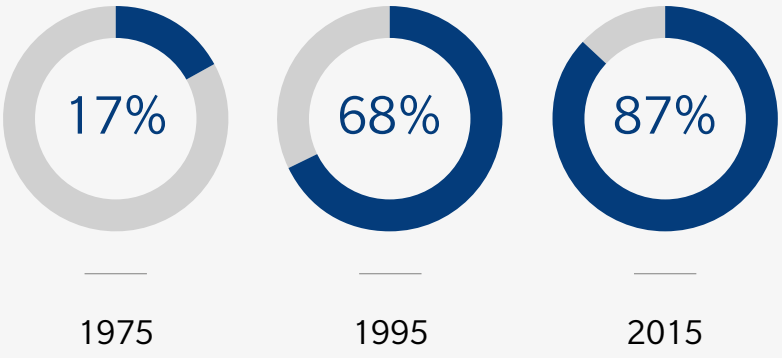
PROTECTING INTANGIBLE ASSETS

The rise of Economy 4.0 has led to us living in an intangible age. Today, the world's largest taxi company owns no cars; the world's biggest media company creates no content; the world's largest accommodation provider owns no property; and the world's largest retailer has no stock.

In 2015, it was estimated that 87% of the value of the Fortune 500 was in intangible assets – up from 17% in 1975, and 68% in 1995[5].

The significant majority of a company's value is intangible in nature, and therefore risk profiles have shifted from tangible to intangible. Intangible assets can include intellectual property (IP), trade secrets, data, reputation, and brand value, to name just a few examples. In our most recent *2016-17 CMT Industry Risk Study,* the top-three risks were all intangible. Cyber encapsulates numerous intangible risks, mainly relating to the use and distribution of technologies that the business is dependent upon. The increased reliance on disruptive technologies and disruption itself further increases the focus on intangible assets and risks.

FIGURE 4 Percentage of the value of the Fortune 500 companies in intangible assets 1975, 1995, and 2015 Source: Ocean Tomo



KEY FINDINGS

The *2016-17 CMT Industry Risk Study* identified the top-10 risks facing CMT companies.

The top-three of these were:

1. Data security and privacy.
2. Technology errors and omissions.
3. Intellectual property.

All of these risks are intangible in nature and are high severity, low frequency events. Many organisations may not experience these events; however, each can potentially bring about the end of a company.

[5] Ocean Tomo. *Ocean Tomo Releases 2015 Annual Study of Intangible Asset Market Value*, available at http://www.oceantomo.com/blog/2015/03-05-ocean-tomo-2015-intangible-asset-market-value/, accessed on 20 September 2017.

Percentage of businesses in 2014 that felt that IP risk is mostly or completely mitigated through buying standalone insurance or other coverage options. **26%**[6].

IP RISK

Comprising patents, copyrights, trademarks, and trade secrets, IP is now a key driver in today's business deals and company valuations.

With the growth of the internet and an exploding market in IP comes an inevitable rise in increasingly complex and expensive litigation, with far-reaching ramifications. On a positive note, there is huge upside potential in using, developing, and protecting IP.

Organisations are no longer valued by the assets they own, but by the ideas they generate and the customers they serve. Protecting these intangible assets has never been more important. Furthermore, they have become increasingly difficult to protect.

As the economic model progresses to the increased use of an on-demand workforce working for several organisations at the same time, some of which may be competitors, the risk of trade secrets being shared, corporate strategy divulged, and key documents removed from the organisational structure increases. In the past, removing a machine containing key algorithms from a company would be extremely difficult. In today's world, a freelance developer can copy and paste key code from one organisation to another in seconds.

In Marsh's *2017 CMT Industry Risk Study,* IP was rated by CMT risk professionals as the third biggest risk facing their organisation[7]. However, only 26% of respondents felt that the risk is mostly or completely mitigated in business through buying standalone IP insurance or other coverage options[7]. For many, a lack of understanding around IP risk and quantifying the exposure are the principal drivers for not purchasing cover. In 2014, for example, circa US$3 billion was spent on patent litigations.

Risk mitigation for these intellectual assets must go to the heart of organisations. When new technology is designed and new patents developed, organisations should be considering potential IP issues.

Intellectual property can be protected in many ways. Traditional coverage can be purchased in the insurance market; however, it is difficult to structure products for these intangible assets. Organisations should take a risk management approach and consider their business continuity planning. Additionally, for patent-related litigation, organisations could consider the use of captive insurance structures, which would allow for a vehicle to fund IP-related risks and their potentially vastly expensive lawsuits.

CYBER RISK

Cyber risk has no globally agreed definition; however, in practice it relates mainly to risks posed by the use of technology and can be linked to sub-categories including data/network privacy, contractual risk and technology errors and omissions, non-damage business interruption (software/network/data), media/content liability, and supply chain disruption.

Economy 4.0 companies have a significant reliance on disruptive technologies and services, including cloud computing and virtualisation, opensource, software/apps, Big Data, automation, artificial intelligence, and the Internet of Things/wearables. Going forward, the risk exposures relating to these technologies will continue to increase, both in complexity and severity.

Operating on the edge of disruptive innovations, or through the early adoption of disruptive technologies, Economy 4.0 companies will be the first to experience and have to manage these related risk exposures.

Organisations are no longer valued by the assets they own, but by the ideas they generate and the customers they serve.

[6] Marsh. *2017 Communications, Media, and Technology Risk Study*, available at https://www.marsh.com/content/dam/marsh/Documents/PDF/US-en/Marsh%20CMT%20Risk%20Study%202017.pdf, accessed on 20 September 2017.

[7] Ibid.

How companies go about, and succeed in, identifying, classifying, quantifying, and ultimately managing these risks could become critical success factors in their overall business models. Further to this, Economy 4.0 companies will test and challenge traditional approaches to insurance, be drivers of risk management innovation, and drive the need for significantly increased (re)insurance market capacities, particularly concerning intangible-related risks. In our *Driving Value and Reducing Risk through Captive Insurance Solutions* paper, we explore how CMT companies are using risk finance strategies to help incubate these emerging risks and develop more effective risk retention-and-transfer strategies.

THE DISRUPTION OF TRADITIONAL ASSETS

Economy 4.0 has seen the prioritisation of access over ownership. From individuals being more likely to rent than own a home, to businesses using collaborative, shared working environments for their office space, access is more important than ownership in Economy 4.0. Additionally, many businesses use outsourced web-hosted servers, which bring with them the benefits of scalability but also increase exposure to data and network security risks. For example, Amazon Web Services, one of the largest web service providers globally, hosts services for more than 800 government agencies, 3,000 educational institutions, and more than 10,000 non-profit organisations[8]. It also has a presence in 190 countries. This is just one example of a market estimated to reach US$195 billion by 2020[9].

The "As-a-service" model dominates Economy 4.0. From "Software as a Service" to "Delivery as a Service", "Infrastructure as a Service", "Entertainment as a Service", and "Travel as a Service", almost all businesses can be offered as a service to customers. This means that businesses do not need to invest as heavily in upfront costs, as they can contract another entity to provide almost all aspects of the value chain at scale and with increased flexibility.

However, with the benefits of having scalable solutions comes a lack of control in the supply chain. For example, data is now hosted in third-party servers, office space is now controlled and managed by a third party, and companies are offering customers their own products as a service, for example, the move from buying an album to streaming music.

The disruption of assets has important implications for both providers and users:

PROVIDERS

- Asset management: Do you own the assets which are being offered as a service?
  - If you own the assets, you need to be able to understand and quantify the exposure of your assets at any given point.
  - If you do not own the assets, you have to ensure that the asset owner is adequately protected.
  - Even if you do not own the assets, it is your responsibility to ensure that the asset owner does not.
- Supply chain management: If there is a disruption in your supply of assets, are you liable for the denial of access?
- Tech E&O insurance: Are you protected if something goes wrong? For example, if you host software and it crashes, what is the ultimate exposure? In this scenario, many companies would be affected.

"Companies' assets have shifted from tangible to intangible assets. The question is, have risk management strategies done the same?"

SAM TILTMAN
SENIOR VICE PRESIDENT - MARSH UK & IRELAND

[8] Forbes. *Scale Beyond Comprehension--Some AWS Numbers,* available at https://www.forbes.com/sites/benkepes/2014/11/25/scale-beyond-comprehension-some-aws-numbers/#16e3887c3af6, accessed on 20 September 2017.

[9] Tech Crunch. *AWS Still Owns the Cloud*, available at https://techcrunch.com/2017/02/02/aws-still-owns-the-cloud/, accessed on 20 September 2017.

USERS

- Scalability issues: How can you ensure that there is adequate capacity to scale your business when required?
- Business continuity: What would happen if your providers were unavailable for a period of time?
- Ownership issues: If you upload your data onto the cloud, who has ultimate ownership of that data, and does your risk management programme include protection from third-party errors?
- Data security risk: Is data being encrypted? How do your users/ employees access data?

Organisations should undertake a thorough review of their risk management programme with these thoughts in mind. They may find that their exposure to traditional physical hazards such as fire, earthquake, and flood are much diminished. However, their liability exposure may have actually increased due to exposure to complex supply chains, the rise of 'renting' assets and processes, and being the provider of services rather than of products.

Business interruption and supply chain losses represent the top concern for businesses around the globe, with average claims 36% higher than direct property claims, according to the *Allianz Risk Barometer 2017*[10]. Many traditional business interruption coverages are limited to losses arising from physical damage, which would not be suitable for those businesses employing the "As-a-service" model, particularly for non-tangible services such as web hosting. Organisations should therefore look to work with partners who understand their complex, international, and expansive supply chains, as well as all of the vulnerabilities they are subject to.

UNDERSTANDING WHERE LIABILITY LIES

Where does liability end? In Economy 4.0, the answer may not be as clear as it was in the past.

There are three elements to understanding the liability of CMT companies with disruptive business models:

- Who is responsible for the actions of workers?
- Who is responsible for assets and services provided through intermediaries?
- When are employers liable for the workers in their service?

WHO IS RESPONSIBLE FOR THE ACTIONS OF WORKERS?

To address the first question, we must use the control test to understand if an entity has employees and is therefore liable for their actions. The control test asks to what extent does an entity have control of the work that the worker carries out, and also to what extent does it control the manner in which it is carried out.

Many would argue that workers using some online marketplace platforms are employees, and therefore the platform is liable for their actions.

This is because the platform can control the work being done (for example, deliveries) and the way in which it is done (for example, by following a specific route).

Many CMT companies use self-employed contractors and therefore would not see the need to purchase employers liability cover for these workers.

"Economy 4.0 is creating new ways for private individuals to connect and enter into commercial relationships. While the nature of the transactions are not new, organisations offering platforms connecting buyers and sellers of products and services have become an extra 'link'. This creates potential ambiguity as to the role of these platform companies: Are they simply a facilitator or do they assume other responsibilities, either as perceived by their users or in the eyes of the law?"

DAVID O'RYAN
MARSH CASUALTY

[10] Allianz. *Allianz Risk Barometer 2017,* available at http://www.agcs.allianz.com/insights/white-papers-and-case-studies/allianz-risk-barometer-2017/, accessed on 5 September 2017.

However, it is likely that they may be found liable for the workers and their actions, as they would pass the control test. Moreover, public perception is that the contractors are in fact employees of the company. Therefore, any digression will have a negative impact on the reputation of the platform, which could have a negative effect on revenue.

WHO IS RESPONSIBLE FOR ASSETS AND SERVICES PROVIDED THROUGH INTERMEDIARIES?

Contingent liability is an extremely important issue for CMT companies providing platforms enabling the trade of assets and services. Organisations need to understand how the assets and services being offered on their platforms are used and where issues may arise. While the owner of the asset or provider of the service is ultimately responsible, platforms may find themselves liable for allowing misrepresentation to occur on the platform. Most companies currently elect to use a peer-rated system, which drives trust, as those people with lower ratings will not be chosen, and those with higher ones will get more business. However, there is a risk that reputations can be damaged from a negative experience. This could manifest itself as a claim by the end user for misrepresentation or a loss resulting from the product or service, for example, an injury sustained while staying in accommodation or while riding in a vehicle offered by the platform. This risk is further compounded by the fact that many individuals offering their services do not have adequate commercial coverage to offer such services.

As individuals, most personal insurance policies do not allow for homes, cars, and other assets to be used commercially.

FIGURE 5 Possible Loss Scenario for an Economy 4.0 Platform Provider
Source: Marsh

- A private home owner 'rents' their home for the weekend to another private individual using an online asset-sharing App.
- The App includes mandatory 'tick box' terms and conditions, which protects the App holder against any/all liability arising from the rental.
- During the weekend there is a fire, which is caused by the negligence of the 'tenant'.
- The fire not only destroys the building and contents of the house but spreads to an adjacent property causing extensive damage.
- The owner of the 'rented' property claims on their home insurance for the damage caused by the 'tenant', but the insurer denies the claim as the owner had not disclosed that they were commercially renting the property.
- The owner of the adjacent property claims under their home insurance. Their insurer settles the claim but subsequently pursues recovery from the owner of the property from where the fire emanated and the 'tenant'.
- Again, the owner's insurer denies cover (for the personal liability of the owner) on the grounds of non-disclosure.
- The 'tenant' has no insurance.

THE OUTCOME

- Both the home owner of the rented property and the insurer of the adjacent property are unable to recover their losses from the 'negligent' party, that is, the 'tenant'.

WHAT MIGHT HAPPEN NEXT?

- Despite having accepted the terms and conditions on the App, the owner of the 'rented' property pursues a claim against the App provider, alleging breach of duty of care/negligence in not taking reasonable care to vet the credentials of the 'tenant'.
- The insurer of the damaged adjacent property has no contractual hurdles to overcome and also seeks recovery from the App provider on the same grounds.

Similarly, individuals offering services will rarely have professional indemnity insurance or error and omissions insurance, unless they are self-employed freelancers with their own personal service companies.

WHEN ARE EMPLOYERS LIABLE FOR THE WORKERS IN THEIR SERVICE?

Organisations increasingly control less of the physical environment that their workers occupy. This creates a problem for risk management because it makes it impossible to reduce moral hazard. Due to advances in technology, many companies allow for their employees to work remotely for at least a portion of their working hours. For other companies, the workplace is an individual's home or vehicle. Traditionally, workplace health and safety could be managed, as all workers occupied the same office space, drove company managed vehicles, and used centrally stored and managed assets.

With Economy 4.0, this is no longer the case. A worker who becomes injured in their own home while working for a company could, in theory, lodge an employers liability claim. Long-term injuries such as back problems, eyesight issues, and other office-related health problems become much more difficult to manage when employees do not have the standard equipment in their own homes or workplace of choice.

As the Internet of Things (IoT) develops, we can expect employers to remotely monitor employee behaviour to ensure they are not behaving in ways that could prejudice their long-term health. However, many employees will not want to have the intrusion of the employer into their lives.

Understanding the physical environment where business is conducted is critical to effective risk management.

This may involve spot checks, surveys, standardised testing of vehicles, or requiring that members of the platform have certain credentials. While insurance can provide indemnity where issues arise, it should not be a replacement for robust risk management.

DEFINING AN ORGANISATION – REGULATORY RISK

The definition of a company and its activities is becoming increasingly complex. As business models evolve, companies can change what they do in a matter of weeks, as their agility allows for rapid transformation. Also, a company may traditionally operate in one sector while considering itself to be doing something entirely different. For example, the CEO of Domino's pizza declared in 2016 that "we are as much a tech company as we are a pizza company"[11]. How a company is defined by itself and legally has a real impact on the risks it faces and the policies it must introduce.

CMT companies providing digital marketplaces and online platforms would argue that their involvement in the transaction ends at that point, providing the platform. However, many regulatory bodies regard them as companies operating in their target sector. For example, the European Court of Justice recently ruled that a global transport network company should be treated as a transport company, rather than an intermediary [12]. This means that the organisation may have to meet additional standards, comply with different regulations, and potentially change its business model.

The European Court of Justice ruling has an impact for many CMT companies operating in industries where there are large incumbents.

[11] Harvard Business Review. 'How Domino's Pizza Reinvented Itself', available at https://hbr.org/2016/11/how-dominos-pizza-reinvented-itself, accessed on 20 September 2017.

[12] The Verge. 'Uber should be treated as a transport company, EU advisor says', available at https://www.theverge.com/2017/5/11/15621714/uber-european-court-ruling-transport-service, accessed on 20 September 2017.

Companies that see themselves primarily as a technology services business may find themselves liable for many other risks they could not foresee, particularly in highly regulated sectors such as financial services, healthcare, and life sciences. More than half of the FTSE 100 companies are concerned by regulatory risks[13] in their annual reports[14].

Organisations can seek to influence regulation by increasing their global public affairs capability. They can work with industry associations and policy research institutes, and participate in advisory boards. By broadening the conversation around the activities of the business, an organisation can hope to influence regulation to its own benefit.

However, this must be seen to be part of a contribution towards public policy creation.

CMT companies must understand their global regulatory footprint and obligations so that they are able to trade legally and effectively. They must also understand the sectors they are disrupting and where potential issues can arise. Understanding these multifaceted and complex exposures is the key to success in Economy 4.0.

More than half of the FTSE 100 companies are concerned by regulatory risks in their annual reports.

[13] Global Counsel. 'Dealing With Political Risk – What FTSE100 companies say', available at https://www.global-counsel.co.uk/sites/default/files/special-reports/downloads/Global_Counsel_Dealing_with_political_risk_what_the_ftse-100_have_to_say.pdf, accessed on 20 September 2017.

[14] Global Trade Review. 'UK Tops FTSE-100 Risk Woes', available at https://www.gtreview.com/news/europe/uk-tops-ftse-100-risk-woes/, accessed on 20 September 2017.

MANAGING RISKS AND CREATING OPPORTUNITIES IN ECONOMY 4.0

Economy 4.0 brings new and changing risks, the extent of which will not be fully realised until much later in the future. However, the dawning of the new economic model brings with it substantial opportunities for those businesses that are able to define their risk landscape and design proactive and agile risk mitigation strategies to deliver value to their operations. We see opportunities to better manage the supply and demand of customers and employees, build transformative cultures, generate better insights into risk, access new forms of risk funding, and create innovative business continuity plans to respond in the moments that matter.

SPOTLIGHT

CMT companies are uniquely placed to take advantage of Economy 4.0.

This is because they often have the best understanding of the latest technology and most agile business models, which are able to respond to changing needs and demands. However, how these companies understand today's emerging technologies and the new risks they create remains to be seen.

BUSINESS RESILIENCE

The employee base will be in a constant state of flux. To some extent this is already the case, as staff levels constantly change throughout the year; however, in Economy 4.0, staff will be able to be 'hired' and 'dismissed' on a minute-by–minute, or job-by-job, basis.

Organisations should make it a priority to re-evaluate their data and analytics usage to power business continuity planning and enterprise risk management. Understanding how disruptive technologies can change risk profiles can provide a clearer view of the type of data needed. As traditional industries increasingly become integrated in Economy 4.0, new insights will help risk planning.

Scenario planning exercises evaluate how future events may play out based on various potential situations. In evaluating disruptive technologies, scenario planning can be useful, for example, in evaluating second- and third-tier supply chain risks, particularly in the communications, media, and technology sectors.

There is an opportunity to integrate innovation and disruptive technology into a strategic risk management framework to provide a more complete picture of risk. Bringing strategy and risk management together provides greater insights into forthcoming risks and opportunities, including technologies that will change (and are already changing) business models. Upgrading management technologies into a single source with easy access to information would highlight the interconnectedness of disruptive technologies and their interdependencies for the Economy 4.0 organisation.

The disruption of Economy 4.0 is an opportunity for risk professionals to develop insights to help their organisations prepare for the unexpected. Investing in resources that improve organisational risk alignment should give risk professionals the bandwidth to keep pace with the blistering rate of change organisations are facing and not get 'bogged down' in everyday risk management.

DEMAND AND SUPPLY MANAGEMENT

Independent 'gig' workers are able to choose which organisation(s) they decide to use to share their services, and both workers and customers have the choice as to which platform they use to access assets and services. Companies need to be able to offer compelling reasons to choose a particular organisation to work with or use a particular platform.

As workers will be contracted to multiple employers at the same time, working on project-based assignments, and having the choice and flexibility to change at short notice, engaging the on-demand workforce is an opportunity for organisations to provide differentiators from their competitors.

Establishing affinity schemes is one such way in which CMT companies can differentiate themselves from other market providers.

More than half of companies surveyed have not conducted risk assessments for the disruptive technologies of Economy 4.0, and 77% of these organisations do not assess their customers and suppliers for cyber risk[15].

[15] Marsh. *Excellence in Risk Management XIV: Ready or Not, Disruption is Here*, available at https://www.marsh.com/ca/en/insights/research/excellence-in-risk-management-xiv.html, accessed on 20 September 2017.

Affinity schemes are specific, specially worded insurance products that are targeted at a homogenous group, for example, contractors working for the same organisation. They are usually administered by an organisation where there is some loyalty to the organisation and a degree of trust, for example, the platform used to connect buyers and sellers.

There is the potential to provide value to workers and customers in three ways. They may be able to access an insurance product at a lower price, have cover that is tailored to their specific risk profile, and potentially have a less administrative process, for example, the ability to buy contingent liability insurance at the point of contracting someone to work for you. An organisation using an on-demand workforce might choose to offer certain affinity products to their workers at no cost as a differentiator from other companies who do not offer such protection.

Jeremy Goodacre, Marsh Affinity, believes that a correctly designed affinity programme using the rich data sources and routes to market in the Economy 4.0 sector are critical to understanding, managing, and mitigating risk for both workers and the corporate using the workers. Many of the loss scenarios sit across both groups and work hand in glove to increase or reduce the risk for both. Working with partners to solve the needs of their specific sector can enable cover, pricing, and service models to be developed that would be unrealistic to expect workers to be able to achieve on their own. Certainty of cover purchased by workers to meet their contractual responsibilities to the Economy 4.0 business or their legal requirements is best achieved with a carefully considered bespoke insurance proposition.

Without such a scheme in place it is more difficult and resource heavy to be confident the correct cover is in place.

Affinities are well suited in those situations where the end-users are in regular contact with the group organisation, they have non-corporate exposures, and there is a wealth of data. Affinities are also successful where there are robust governance structures in place, ensuring that all members of the group adhere to the same standards. Many Economy 4.0 organisations typically have many of these characteristics: regular engagement with customers and workers through online communities and apps, typically individuals or small organisations are being connected, and there is a wealth of data being collected through the process. Many Economy 4.0 companies also require tasks to be completed in a certain way, and this would form the basis of a governance structure. Companies can benefit in three ways:

Improve engagement: Brand loyalty is increased as organisations offering affinity products to their customers and workers are seen to be actively engaged in the wellbeing and welfare of their community. The choice then becomes less about the price at which services are contracted, and more about the wider experience and the associated value. Demand for services and the supply of those services can then be more easily controlled, as people are less likely to choose to change platform or company simply for price. The organisation also benefits from piece of mind that all participants in their eco-system are properly protected.

Attracting new members: With the increased reputation as a credible employer, more people will want to work for an organisation and, critically, more high-calibre workers will be attracted to it.

QUESTIONS TO CONSIDER

- How can you change your culture to embrace Economy 4.0?
- How can you effectively manage the risks of a relatively autonomous workforce?
- To what extent are your business continuity plans ready for the future?
- From a corporate perspective, can insurance be seen more as an opportunity enabler rather than just a sunk cost or form of contingent capital?

This in turn, may attract more customers, as the quality of services provided by a company will likely increase.

Additional revenue generation: The provision of affinity insurance products can allow for organisations to generate additional revenue. However, many organisations may choose to provide these solutions as benefits in kind to their workforce or members.

POTENTIAL SOLUTIONS

Potential solutions to insurance scheme arrangements for economy 4.0 workers are broadly in line with any other scheme provision and are subject to appropriate regulatory frameworks. However, the uncertainty of employment status can make more traditional propositions unsuitable. Therefore careful thought and detailed discussion is required to decide which, if any, of the following work best for any given scenario:

FIGURE 6 Potential Solutions to Protect and Engage Users of Economy 4.0
Source: Marsh

"A disjointed, diverse, and dispersed workforce makes risk management difficult from a cultural and managerial perspective. Businesses need to understand how best to build and maintain their culture in this context and ensure that their reputations are protected."

BENJAMIN HINDSON
CMT INDUSTRY PRACTICE

EMPLOYEE ENGAGEMENT

The Oxford Internet Institute found that 74% of gig economy workers never communicate face-to-face with other people in the course of work carried out in Economy 4.0[16]. In addition, it highlighted that most of the work carried out on online gig work platforms was carried out in different time zones, making real-time communication and the ability for workers to form a shared identity difficult. Indeed, 94% of the workers surveyed were not part of any labour union or worker association.

Issues such as these might contribute to social isolation and a lack of organisational culture, which may be intensified by the fact that many people don't know who they are ultimately working for. Not limited to the online-only space, social isolation can exist among delivery and taxi drivers, as there is rarely a centralised meeting point due to the distributed nature of pick-up points and destinations. On one hand, this paints a bleak picture of Economy 4.0. However, organisations have the opportunity to create digital cultures and organisational behaviours, which help to engage employees in the work they are carrying out. Strategic investments to build culture and accountability for activity will help to improve engagement rates and also create security in the workforce. This allows for the organisation to be sure it can continue to provide its services and not be open to a mass walk out with no notice.

One of the suggestions of the Oxford Internet Institute is the creation of a FairWork framework for on-demand employers to adhere to in order to prevent exploitative employment practices. If a company was to introduce such a framework and demonstrate compliance, it can enhance its reputation with both workers and customers alike[17].

Another opportunity for differentiation and engagement building is to introduce a code of conduct for Economy 4.0. The crowdtesting provider, Testbirds, has introduced a code of conduct for crowdworkers to create a basis for a trusting and fair cooperation between service providers, clients, and crowdworkers, supplementary to current legislation. These principles are[18]:

- Tasks in conformance with the law.
- Clarification on legal situations.
- Fair payment.
- Motivating and good work.
- Respectful interaction.
- Clear tasks and reasonable timing.
- Freedom and flexibility.
- Constructive feedback and open communication.
- Regulated approval process and rework.
- Data protection and privacy.

Codes of conduct such as these serve to build a more secure workforce and protect the reputations of organisations as responsible bastions of ethical consumerism.

LEVERAGING DATA FOR RISK MANAGEMENT INSIGHT

Traditional risk sharing in risk management involves the transfer of some or all of the risk to a third party, normally an insurance company. This process is usually driven on an annual cycle of submission of underwriting data to a broker, which then presents the risk to insurance companies to obtain capacity to underwrite the risk.

Most of the work carried out on online gig work platforms was carried out in different time zones, making real-time communication and the ability for workers to form a shared identity difficult. Indeed, 94% of the workers surveyed for *The Risks and Rewards of Online Gig Work at the Global Margins* were not part of any labour union or worker association[19].

[16] Oxford University. *The Risks and Rewards of Online Gig Work at the Global Margins*, available at https://www.oii.ox.ac.uk/wp-content/uploads/2017/03/gigwork.pdf, accessed on 20 September 2017.

[17] Oxford University. *A FairWork Foundation*, available at https://www.oii.ox.ac.uk/publications/fairwork.pdf, accessed on 20 September 2017.

[18] Paid Crowdsourcing for the Better, available at http://www.crowdsourcing-code.com/, accessed on 20 September 2017.

[19] *The Risks and Rewards of Online Gig Work at the Global Margins.*

However, Economy 4.0 is disrupting this process. The IoT and advances in technology are redefining the risk transfer mechanism. For example, the risk exposure of an organisation could be monitored in real time by sensors, which then feed the information to the risk management function of the organisation and to their insurance providers. The exposure and subsequent premium could then be charged in real time rather than retroactively, or as estimates for the future. However, this removes much of the certainty of an annually payable premium.

In addition to real-time premium calculations, risk management professionals will be able to monitor their businesses remotely, in real time, allowing for incidents to be identified and controlled much quicker than is currently possible. This would not be limited to the monitoring of physical assets but could be extended to networks, data stores, and even employees.

The arrival of big data in the workplace will help with the predictive analysis of risks and the likely impact they will have on businesses. Working with specialists, organisations can evaluate their risk transfer programme and asses what the right programme is to maximise value to their businesses.

The security of data is becoming increasingly paramount for organisations as more information is being stored in the cloud and transferred between different parties. As more data has the ability to be captured and stored, organisations should ensure that their assets are adequately protected in the event that a malicious third party is able to access them.

ACCESS TO NEW CAPITAL AND RISK TRANSFER MODELS

Innovative and disruptive business models discussed in this paper require equally innovative risk financing models to ensure they are protected.

In recent years, crowdfunding has been an increasingly important source of capital for organisations, particularly those embracing Economy 4.0. In 2015, US$34 billion was invested through crowdfunding, in comparison to an average of US$30 billion per year by venture capital and US$20 billion per year on average from angel capital . As more and more businesses look to crowdfunding and new capital models, existing insurance covers may need to be amended to reflect additional risk exposures and, where crowdfunded capital is used to invest in acquisitions, appropriate due diligence of the insurance-related issues and transaction tools to help and smooth the progress of the acquisition should be considered.

Economy 4.0 is at the forefront of new risks and industries. Often, these risks have never existed before and insurers have little experience of underwriting them. This presents serious issues for innovative companies, as they may struggle to find effective capacity in traditional insurance markets. Organisations may be able to use captives, a proprietary licensed insurance company to provide insurance for themselves, to fund their risk transfer. This can be particularly effective where risks are emerging and there is no appetite to underwrite the information. Economy 4.0 risks such as cyber, contingent business interruption, patent, and reputation risks are ideal candidates to be incubated in captives until there is sufficient market capacity, suitable pricing, and adequate appetite available in the commercial market.

In 2015, US$34 billion was invested through crowd funding, in comparison to an average of US$30 billion per year by venture capital and US$20 billion per year on average from angel capital[20].

[20] Forbes. 'Trends Show Crowdfunding To Surpass VC In 2016', availabile at https://www.forbes.com/sites/chancebarnett/2015/06/09/trends-show-crowdfunding-to-surpass-vc-in-2016/2/#6defc2c0666f, accessed on 20 September 2017.

Captives and alternative risk transfer mechanisms can provide an effective risk management and transfer strategy for many CMT companies. However, they are not a solution to all risks faced by these companies.

When designing a programme that includes alternative transfer mechanisms, businesses should also consider optimising the overall risk finance strategy to ensure the most efficient levels of risk are retained and transferred.

They must also have confidence in retaining esoteric risks under "risk incubator" strategies.

As CMT companies look to more sophisticated forms of capital fund raising and risk mitigation and transfer to address the specific and unique risks they face, they should consider the overall risk finance optimisation strategy and the available finance vehicles. Some risk financing vehicles require significant investment and this should also feature in discussions with an experienced adviser.

ECONOMY 4.0 – REPUTATION IS KING

Companies that fail to recognise disruptive technology risks and coordinate their management will be unable to optimise the opportunities.

The very nature of employment and traditional business models is changing. New risks to the modern organisation are emerging faster than ever before, and businesses need to be able to react to these risks and proactively manage them to protect their business. As the workforce becomes more flexible and transient, coupled with an increasing trend towards an intangible economic model, the most important assets of a company will be the ones that cannot be seen: their reputation and their ideas.

Risk management is being disrupted by Economy 4.0. Businesses must invest in a holistic, data and analytically driven approach to risk management, which ensures the primacy of reputation.

Warren Buffet once said that "it takes 20 years to build a reputation and five minutes to ruin it"[21]. In Economy 4.0, the time to ruin it can be hundredths of a second. Therefore, understanding risks, their contingencies, and their consequences has never been so important.

As consumers and workers look to companies for more interaction, the opportunity to be recognised as a leader in ethical consumerism and employment is an opportunity not to be missed. We are living in Economy 4.0, and businesses that do not innovate their risk management strategies threaten their very survival in this new age.

"For many organisations, there is a strong requirement to protect their brand and reputation, therefore the duty of care towards users of the service should be a key focus for decision makers to ensure business success."

CARRICK LAMBERT
INDUSTRY PRACTICE LEADER

[21] Huffington Post, available at: https://www.huffingtonpost.com/2013/08/30/warren-buffett-quotes_n_3842509.html, accessed 10 October 2017.

CONCLUSION

In this paper we have aimed to provide you with an outline of the disruptive forces that are expected to play out in the workplace in the near future. We see this as part of a wider shift towards a digitally enabled economy and society driven primarily by individuals. We call this Economy 4.0.

We expect that CMT companies will be the first industries to be affected by the shift towards Economy 4.0, as these companies are driving the agenda themselves and have already created new business models, working practices, and consumer experiences which align to the new normal. In time, we see a wider shift across all industries, many of which will follow in the footsteps of CMT organisations. Economy 4.0 challenges not only traditional business models but also key insurance concepts that have existed for centuries.

This shift is changing the risk landscapes of organisations. From the redefinition of a worker or employee to the increasing difficulty of protecting intellectual property, approaching the management of risks is evolving from traditional annually renewable "bricks and mortar" policies to more flexible and dynamic solutions. Organisations need to also protect today's most valuable asset: data.

Economy 4.0 provides opportunities to improve risk management and build better engagement with workers and customers. We have raised some points for discussion with regards to your business plans for Economy 4.0. Firstly, does your organisation have adequate business resilience plans for the intangible, digital age? (Have you considered new scenarios being created by Economy 4.0? How can you use Economy 4.0 to be the employer and supplier of choice?) Secondly, how can you take advantage of the vast amounts of data available to provide better risk management insight? And finally, should your approach to risk management be as innovative as your business activities?

Businesses who fail to embrace Economy 4.0 will not survive the new wave of change. In order to thrive in this new environment, businesses should consider how they approach risk management in the whole and how to effectively protect their key intangible assets: data, IP, and reputation. It is undeniable that traditional assets will continue to play an important part in Economy 4.0 businesses. However, intangible assets and their associated risks, which are becoming increasingly complex in nature, will dominate the Economy 4.0 risks. Understanding and managing them will be key, not only to survive but thrive.

Economy 4.0 challenges not only traditional business models but also challenge key insurance concepts that have existed for centuries.

About Marsh

Marsh is a global leader in insurance broking and innovative risk management solutions. Our CMT Industry Practice is dedicated to helping you identify, quantify, manage, and mitigate your composite risks. Many companies that operate in the CMT industry sectors are on the frontier of emerging risks, pushing boundaries with their business models and disrupting industries. This means they require tailored advice and customised solutions which go way beyond "standard". Access to truly global solutions and advice can be key for CMT companies. Ranging from rapidly emerging businesses to international conglomerates, we can cover your needs through our international operations in more than 130 countries. Our flexible approach combined with our significant human and knowledge resources enables us to advise across the entire journey of risk services, or advise on specific projects, risk categories, or challenges.

Marsh works with clients of all sizes to define, design, and deliver innovative solutions to better quantify and manage risk. To every client interaction we bring a powerful combination of deep intellectual capital, industry-specific expertise, global experience, and collaboration. We offer risk management, risk consulting, insurance broking, alternative risk financing, and insurance programme management services.

Since 1871 clients have relied on Marsh for trusted advice, to represent their interests in the marketplace, make sense of an increasingly complex world, and help turn risks into new opportunities for growth. Our more than 30,000 colleagues work on behalf of our clients, who are enterprises of all sizes in every industry, and include businesses, government entities, multinational organisations, and individuals around the world.

We are a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), the leading global professional services firm in the areas of risk, strategy and people. With 60,000 colleagues worldwide and annual revenue exceeding $13 billion, Marsh & McLennan Companies also include global leaders Guy Carpenter, Mercer, and Oliver Wyman.

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https://www.marsh.com/uk/industries/communications-media-technology.html.

CARRICK LAMBERT

Industry Practice Leader
Communications, Media, and Technology - Marsh UK & Ireland
+44 (0)20 7357 5480
carrick.lambert@marsh.com

SAM TILTMAN

Head of Business Development
Communications, Media, and Technology - Marsh UK & Ireland
+44 (0)20 7357 3255
sam.tiltman@marsh.com

BENJAMIN HINDSON

Knowledge Manager
Communications, Media, and Technology - Marsh UK & Ireland
+44 (0)20 7178 4479
benjamin.hindson@marsh.com