

# Supporting Organisations to Understand & Address Data Issues within a Changing World

Joint White Paper

Within our Fujitsu/Veritas partnership, we fully understand the business pressures that organisations are currently experiencing in order to remain viable within a continually evolving and increasingly competitive marketplace. From the drive to try and grow their business, increase profitability and introduce new technologies by securing a greater market share, to effectively managing rising costs, improving efficiencies and driving through digital transformations. While at all times having to maintain the agility and flexibility required to address the increased security, compliance and risk obligations that are being introduced.

Both Fujitsu and Veritas recognise that at the core of all of these objectives, initiatives and obligations is an organisations data. The key for organisations to be able to successfully deliver against their business strategy while meeting their obligations is their ability to fully understanding, correctly align and manage their data in the most appropriate manner.

Global data volumes continue to grow at unprecedented rates and in today's data driven society no organisation is immune to this trend. Organisations irrespective of their size, location or operating market are now creating, ingesting, storing, sharing, securing, protecting, analysing and trying ensure compliance around more data than ever before, and in many ways that were inconceivable less than a decade ago.

This White Paper examines some of the main data issues faced by organisations in a continually changing business world and outlines how Fujitsu working closely with our strategic partner Veritas can work with these organisations to give them a better understanding of their data, thereby allowing for:

- A more accurate alignment between their business and data strategies
- The ability to maintain compliance in the face of increased legislation
- The capability to exploit the valuable business information that their data contains.

Thus, placing these organisations in a far stronger position to deliver the services and products that their customers are demanding.

## CONTENTS

Introduction .....	2
Data Growth & Rates of Change .....	2
Understanding Data Origin & Maintaining Quality .....	3
Legacy Architectures & Data Sharing .....	4
Data Security & Privacy .....	4
Data Governance & Usage .....	6
Big Data .....	7
The Internet of Things (IoT) .....	8
Cloud Computing .....	9
Data Monetisation .....	10
Resources .....	11
Summary .....	11
How Fujitsu and Veritas can help Organisations address their data requirements .....	13
Why Fujitsu & Veritas? .....	15

## INTRODUCTION

The ways in which we produce and consume data is quite literally changing our world, therefore whether they acknowledge the fact or not, organisations irrespective of size, sector or location are now data organisations. Business requirements are now invariably data requirements and no informed business decisions should be made until an organisation fully understands its data.

As a consequence of this, the data generated by, and held within organisations is now their most important and valuable business asset, and as the data landscape continues to evolve it is the organisations who understand their data and view it as a strategic business asset who will be in the strongest position to achieve their objectives. As with evolution, the organisations who understand their data and embrace the new technologies in order to expand and open up new opportunities are the ones who will thrive, those who don't will fall behind and, in many cases, cease to exist.

Therefore, organisations across all business sectors need to move away from simply viewing their data as a commodity and start to view it far more strategically and to treat it as a living and evolving entity, one which, if understood and managed correctly is capable of unleashing significant new business opportunities.

Once understood, organisations can use their data to help drive their business and give them a key competitive advantage. Organisations can strategically use their data in a number of ways:

- Firstly, to make more informed business decisions, irrespective of whether an organisation is looking to increase revenue, target new customers or develop new products or offerings.
- Secondly to improve operational effectiveness by using data to ensure that day-to-day operations and business processes and procedures are optimised for their business.
- Thirdly to monetarise their data not only by exploiting the valuable information that it contains in order to increase profitability but also by selling the data to other organisations and interested third parties who also value that data.

In today's data driven society, it is these abilities that are the key components for any organisation looking to grow or evolve their business.

However, the key to being able to gain these advantages is the understanding of the data so that the correct business alignments can be made, but, it is this understanding of their data that is causing problems within many organisations. The volume and complexity of data today is far greater than it has ever been and many organisations, even those who consider themselves to have a good understanding of technology are still struggling to understand, manage, align and exploit their data while still trying to control costs, select and deploy the most appropriate data solution and ensuring that their data meets legal and compliance requirements.

As both the value and complexity of data continues to increase one of the key requirements that organisations need to have in place in order to understand their data and be in a strong position to reap its rewards is a clearly defined 'data strategy' which sets out the objectives for the organisation and how their data can help in achieving them. In order to extract the utmost benefit from their data, organisations need to ensure that the objectives that make up their data strategy are clearly defined and correctly aligned to their business, this will allow them to more easily identify the data which will allow them to make the most appropriate business decisions. However, in order to maximise its effectiveness, as well as being integrated with, and aligned to their objectives, the data strategy also needs to be companywide and not buried within a specific area, such as IT, otherwise its business value will be significantly reduced.

But, before any organisation can embark on the production and alignment of the correct data strategy they first must understand their data and the current core issues which are having significant impacts on many organisations. As the importance and value of data continues to grow even further, the ability to successfully address these issues will play a pivotal role in shaping their future business.

## DATA GROWTH & RATES OF CHANGE

All organisations are now data driven and that data continues to grow at unprecedented rates. There are many sources predicting significant growth carrying on towards 2020 and beyond, with IDC estimating that in 2025, the world will create and replicate 163ZB of data (i.e.  $1.63 \times 10^{23}$  bytes – see Fig 1, next page), this represents a tenfold increase from the amount of data created in 2016.

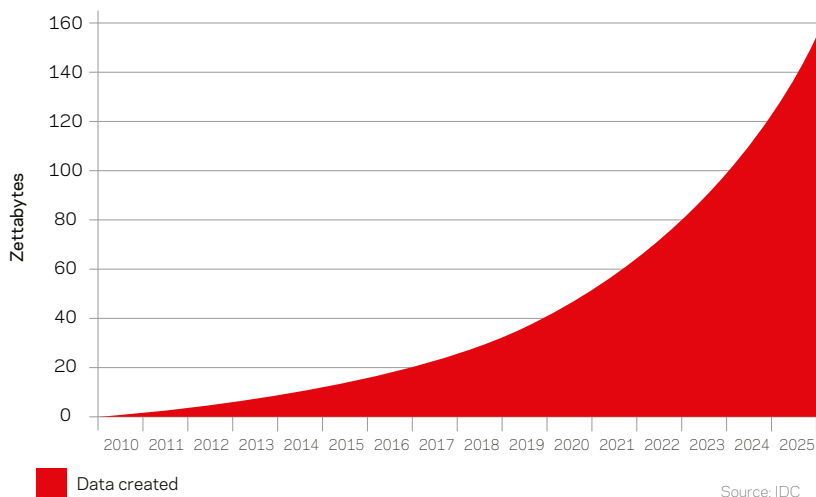


Figure 1: Predicted increase in global data creation.

However, it is not just the volume of data that has to be contended with but also the rate of data change, for example there is every indication that the 'data cosmos' is doubling every two years, and when you also factor in the social and behavioural changes that are taking place both within organisations as well as within the general population it's easy to see why organisations now have far less time to react to this change and the demands that the data places upon their business. Because, it's not just how fast data is being produced and changed that are the problems for many organisations but how fast that data needs to be processed, understood, managed and exploited.

## UNDERSTANDING DATA ORIGIN & MAINTAINING QUALITY

The changing face of business means that there is a continuing and significant increase within the digital arena for both B2B and B2C interactions. Businesses and consumers alike are demanding an on-line, always available digital experience from whoever they are dealing with. This increased level of interaction means that organisations are having to cope with data that is not only many different formats but which also originates from multiple and diverse sources, (see Fig 2).

Within many organisations a significant volume of their data still resides within legacy silos, as well as inhibiting data sharing and communication between different areas of the organisation many of these siloed environments still rely on processes and procedures that are particular to a specific department or area. This can lead to significant data management issues which can then result in inaccurate and poor-quality data due to the inability of that data to be correctly monitored, aligned and maintained.



Figure 2: Organisations now have to cope with multiple data origins and formats

Complications are further compounded by the changing state of the data once it comes under an organisations control, for example, not only can the data have different attributes such as primary, secondary and archive, it can also move between these attributes in any direction and at any given time. There are multiple factors that can influence this 'change of state' such as the age of the data, current business requirements, external influences (such as changes in legislation) and even in the movement or sharing of the data between different locations and organisations.

This wide variety of data formats, origins and lack of communication can cause significant issues because data cannot be exploited if organisations do not know what data they need to collect (and from what sources) or what information they need to extract and how to make it easily accessible across their business.

Therefore, the challenge here for organisations is to understand their data flow and lifecycle in order to be able to confirm its validity, integrity, accuracy and consistency which must be verified, understood and maintained at all times. As well as understanding what data they need to harvest, where it will come from and what they will actually do with it once it has been collected.

## LEGACY ARCHITECTURES & DATA SHARING

As previously stated, global data volumes are growing at unprecedented rates, this can be attributed in the most part to the moving away from the more structured data formats, environments and solutions to the more unstructured formats that are being generated at phenomenal rates by new applications, IT transformations and the consumers seemingly never ending desire for digital interaction on a 24x 7 basis.

This massive increase in data coupled with the changes in business operations and requirements as well as the evolving and more demanding customer expectations will highlight and significantly increase the complexities, inefficiencies, vulnerabilities and costs of the current legacy data systems that still form the core IT infrastructure for many organisations.

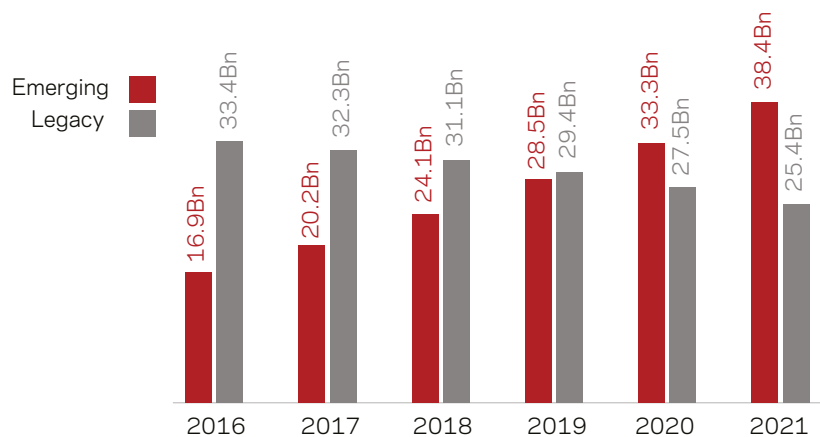
Trying to address these business challenges by simply adding to these existing environments not only dramatically increases the complexity of these data environments it is also places an increased strain upon the technology, the business and the human resources required to manage them.

This increase in complexity can result in a myriad of data issues from storage, backup and archive, to disaster recovery, business continuity and compliance, all of which can have a negative impact on both customers and the business. As data is now created, shared and accessed across multiple areas both within and in many cases outside of organisations, the challenges over understanding, unifying, distributing and sharing data are now even more complex. A result of this is that many organisations are now beginning to recognise the limitations and strains that are being placed on their business by their legacy data systems.

Trying to solve these issues by the layering of new technologies over the top of out-of-date core infrastructures is not the way forward as it will only provide a tactical short-term solution, one that will be far more costly, disruptive and with increased risk to remedy in the future as data, operational and consumer demands continue to evolve.

To address these issues will require more than just a technology change to an existing infrastructure, the moving away from viewing data solutions tactically to viewing them as a strategic core to the business will be needed. In many cases this will require a complete overhaul of the front and back-end systems as well as the supporting processes and procedures in order to effectively drive the digital business transformation needed to meet evolving demands.

In a recent analysis for Fujitsu, PAC have concluded that by 2020 global spending on emerging technologies such as Big Data, the Internet of Things and Cloud will outstrip that spent on legacy environments (see Fig 3). However, the ability of organisations to understand, manage and strategically align their data will be a key component in ensuring that any financial outlay on new technologies will be able to deliver against the expectations of the business.



Source: PAC

Figure 3: Projected legacy and emerging technology spend

## DATA SECURITY & PRIVACY

Organisations today are holding huge volumes of valuable, personal and confidential data and as a result of this they are prime target for criminals looking to exploit security vulnerabilities to gain access to those data environments.

The 2017 Internet Organised Crime Threat Assessment (IOCTA) conducted by the European Union Agency for Law Enforcement Cooperation (EUROPOL) categorised many organisations that hold large volumes of data as part of the 'Critical Infrastructure', i.e. an asset, system or part thereof located in member states which is essential for the maintenance of vital societal functions, health, safety, security, economic or social well-being of its people, (see Fig. 4, next page).



Figure 4: Data security is now a core requirement across all industries

Any disruption, destruction or indication of those data infrastructures being compromised in any way would have a significant negative impact both within the country affected as well as within a wider geographical context and could well result in their inability to maintain vital functions. The importance of these organisations to the overall economy as well as the critically of their data to an individual organisation means that a high level of security is a core component of their data management strategy.

However, it is not just across the critical infrastructures that data needs to be protected, the majority of organisations now manage a great deal of highly personal and sensitive data, therefore, security, privacy and compliance need to play a significant role across all organisations business operations. As data is now viewed as an organisations most critical business asset, every organisation irrespective of sector or size must protect their data, otherwise they risk a potentially catastrophic impact to their business should their data be stolen or compromised in any way.

Numbers released by digital security company Gemalto show that more data records were leaked or stolen by criminals during the first half of 2017 (1.9 billion) than all of 2016 (1.37 billion). During the first half of 2017 there were 918 reported data breaches worldwide, compared with 815 in the last six months of 2016, an increase of 13 percent. While the Information Security Forum (ISF), a global, independent information security body considered the world's leading authority on cyber security and information risk management, has recently announced that the number, magnitude and costs of data breaches are all set to continue on their upward trajectories through 2018 and beyond. The numbers displayed on the [Breach Level Index](#) for September 2018 clearly indicate the scale of the problem that organisations are now facing when it comes to securing and protecting their data (see Fig. 5).



Figure 5: Information is being lost or stolen at alarming rates (Breach Level Index captured September 2018)

It is not just the increase in the size, frequency and reputational implications of these attacks that are a major cause for concern but the fact that criminals are becoming more sophisticated in the targeting and execution of these crimes, making prevention, detection and remediation far more difficult and costly.

As a result of the increase and sophistication of attacks the barriers that organisations are now having to erect around their data to prohibit unlawful access are becoming increasingly complex making the management, lawful access and sharing of that data increasingly difficult.

Unlike security which is the act of erecting barriers around data to restrict access, privacy is a collection of legal rules and guidelines that dictate how data can be used, shared, stored and transferred. While there have been laws in place protecting privacy for many years the increase in cybercrime, the rights of the individual and the value of information has seen the introduction of

additional legislation that has major implications for all organisations both inside and outside of the European Union (EU) when it comes to managing their data.

As volumes increase and organisations look to use the valuable information contained within their data to assist in delivering their business objectives, the need to maintain security, privacy and compliance is now of utmost importance and conversations within these areas are now at the forefront for many senior management teams. However, ensuring that these objectives and requirements are met is predicated upon fully understanding the data in question and how it is stored, used and shared both within and outside of the organisation. As any lack of data understanding will result in the introduction of increased vulnerabilities and risks into already highly complex environments.

## DATA GOVERNANCE & USAGE

As they strive to growth their business whether through the introduction of new products and services, the streamlining of business operations or the monetarisation of their data, organisations are collecting, analysing and sharing more data than ever before. However, these organisations need to ensure that the correct level of data governance is employed within their business otherwise they risk turning their most valuable business asset into a potentially destructive liability.

Organisations have always had a duty of care when it comes to managing their data and ensuring their adherence to regulatory and legal guidelines. Not only should data be securely stored, every effort must also be made to prevent errors and any errors that are found must be corrected in a timely manner, in addition to this any data related issues must be escalated to the appropriate body so that the correct action can be taken.

There are many laws concerning data, however, the introduction of the General Data Protection Regulation (GDPR) in 2018 further increases the complexity around data governance and its usage. GDPR is the largest legislative change in recent years when it comes to the collection, retention, usage and sharing of personal data and all organisations both inside and outside of the European Union (EU) will have to conform to the directive.

Like all large regulations GDPR is complex, comprising of eleven chapters and ninety-four articles (see Fig 6). GDPR covers all types of data from customers and employees to phone records and even log data that may simply record access an individual's access to a specific department or building.

GDPR is not only concerned with localised data, any data that may be shared with external organisations and third-parties (such as a cloud provider) will have to conform to the regulations. Because GDPR is a European wide directive it covers all data processing which takes place within an EU member state, whether or not the data subjects are EU nationals.



Figure 6: The eleven chapters of GDPR



The table below focuses on five key data areas that organisations need to be aware of:

GDPR Key Area #1 'right to be forgotten & data erasure'	GDPR Key Area #2 'consent'	GDPR Key Area #3 'subject access requests' (SARs)	GDPR Key Area #4 'data flow'	GDPR Key Area #5 'pseudonymisation'
Under GDPR individuals can request access to their own personal data or its removal without the need for any external authorisation. Some data may be retained to ensure compliance with other regulations, but if there is no valid justification the individual's right to be forgotten takes precedence.	Under GDPR the individual retains the rights to their own data. Because of this there is no automatic opt-in regarding the collection of their personal data and individuals have the right to know what personal data is being gathered, what it will be used for, and should there be a requirement to share the data with third-parties, additional consent will be required.	A SAR is a request from an individual to access the personal information that an organisation may hold about them. For example, why is their data is being processed, the description of the personal data concerning them, who has received (or will receive) their personal data and where did the data originate from (if it was not collected directly from them). In most cases organisations will have one month to respond to a SAR.	Data is now not only collected from multiple sources it is also shared and transferred across multiple geographical locations and in many cases across multiple organisations. GDPR imposes strict end-to-end accountability thereby ensuring that an individual's data is adequately protected by ensuring that not only the data owner is fully compliant but any organisation that may have access to that data is also fully compliant.	In order to ensure that personal data is maintained under a need-to-know basis GDPR aims to ensure that personal data, irrespective of whatever environment it resides within, must undergo a level of pseudonymisation (i.e. personal data must be processed in such a way that the data can no longer be attributed to a specific data subject without the use of additional (separately held) information).

Any one of these key areas if not addressed will place a significant burden on any organisation that is not fully in control of its data. Therefore, in order to address the challenges that GDPR brings many organisations will need to incorporate new processes and procedures in order to demonstrate the transparency of their collection, processing and remediation activities relating to their data. However, before they can embark on this work they will first have to fully understand their data within the context of their business and its alignment to GDPR as well as any other compliance regulations that they are bound by and given the volumes and complexities of data that organisations now have to contend with, this will not be a simple task.

## BIG DATA

The term Big Data has now been around for a number of years and there is still some confusion over what it actually means, this is because as data volumes grow and our use of data diversifies into ever changing markets and technologies the term 'big data' is continually reinventing itself as it is considered the catch-all term to explain the ever-evolving digital transformations that influence our lives. However, the current accepted explanation is the 4Vs definition of **Volume**, **Velocity**, **Variety** and **Veracity** (see Fig 7).

As long as we have had written records we have had data, however with the growth in technology almost everything we now do leaves some sort of digital footprint, from communicating with friends and colleagues, shopping, banking, to being tracked by surveillance devices, the list is seemingly endless. However, big data is more than just an individual's data trail, it's the collection of all relevant data be it human or machine generated, and an organisations ability to store, share, analyse and exploit that data in order to further their business objectives.

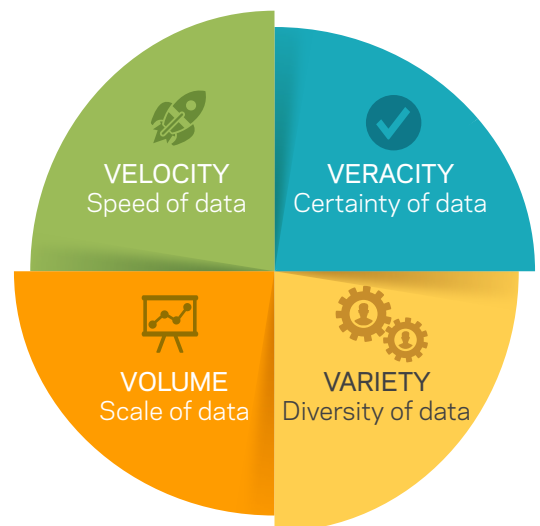


Figure 7: The four Vs of Big Data

The use of data to make strategic and operational business decisions is not a new phenomenon, organisations have been collecting, storing and analysing large volumes of data for generations. Today however the volume, structure and importance of that data has changed significantly, these changes bring with them the increased complexity of storing, protecting, analysing and sharing of that data so that the information it contains can be correctly understood and exploited. Because of this we believe that in today's data driven world that a 5th V should be added to the current model, and that V should stand for **Value**, because having all this data

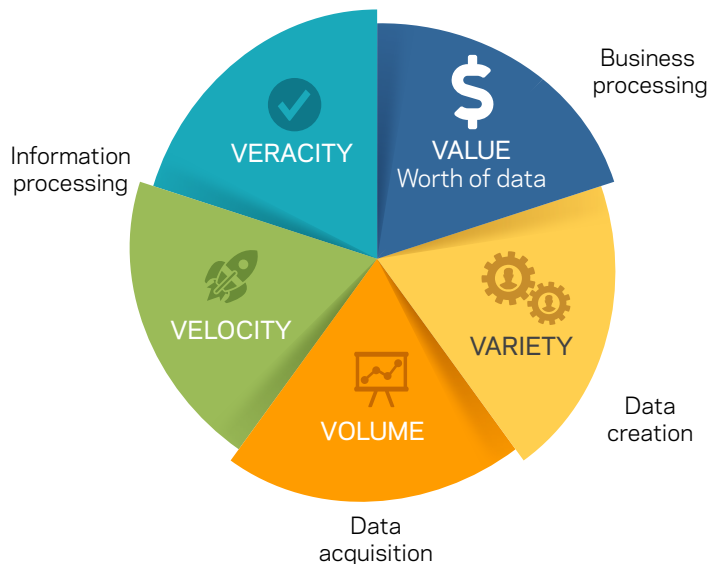


Figure 8: The '5th V' of Data is 'Value'

at your fingertips is all well and good, but, if the data is not understood and the business value is unable to be extracted then not only can it deliver little or no business value it can actually become a liability (see Fig 8).

Big data has also impacted the technology required to manage it in an effective manner. Developments in database technologies over the past decade make it possible to collect and maintain large and complex amounts of structured data within data warehouse applications. However, in today's big data environments the vast majority of data collected for analysis is not in a convenient format that can be easily ingested into a standard database. Much of the data collected for analysis today originates from multiple and diverse sources and is now in an unstructured format such as e-mails, text files, videos, photos, images, audio files, presentations and webpages (or combinations of all of them) many of which have been created with proprietary applications. This requires new

technologies to store, manage and extract the valuable information, these solutions can be expensive and, in some cases highly complex, therefore, the understanding of the data and its correct alignment to both the business requirements and any proposed technology platform is crucial if the required benefits of the solution are to be realised.

In order to realise those business benefits there are a number of phases that organisations need to go through (see Fig 9). However, the pivotal point is the management of the data once it has been created or acquired, here the devil is very much in the detail and before the data can be used by the business and any value extracted the data first has to be fully understood so that it can be correctly aligned, analysed and used in the most appropriate and beneficial manner.

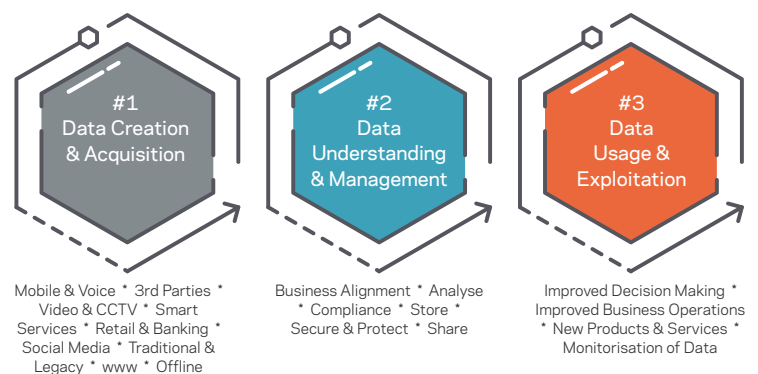


Figure 9: The three high-level phases of extracting data value

## THE INTERNET OF THINGS (IOT)

Over the next five to ten years the connectivity and communication brought about by the IoT (also sometimes referred to as the Internet of Everything (IoE)) in order to share information, anticipate needs, solve problems and improve efficiency will have a significant impact on all organisations and their data management.

Even though we are still in the relatively early stages of exploiting the potential that the IoT is promising to deliver, the impact has already been felt within many organisations. However, with Statista predicting that the number of IoT connected devices will increase from approximately 15 billion in 2015 to over 75 billion in 2025 that impact is set for a major increase that will have significant data implications.

The IoT is undergoing rapid development and over the coming years it will dramatically change the way that organisations operate and deliver their products and services. For example, by 2020 one estimation has over 250 million cars connected to the internet, this massively increases the scope for a wide variety of in-vehicle services such as automated driving as well as secondary opportunities such as individual insurance policies tailored to people's driving habits.

Wearable technology which is a core component of the IoT has also experienced significant growth, with Gartner predicting a year-on-year rise of around 17 percent, with 2017 worldwide sales in the order of 310 million devices generating over \$30 billion in revenue.



But it's not just devices that connect to the internet, devices that can connect to each other to generate and share data between themselves are also experiencing significant growth and it has been predicted that by 2024 there will be around 30 billion machine-to-machine connections.

However, embracing this technology is not without its challenges. The growing use of the IoT is creating huge amounts of data that has to be understood, managed and processed. With this increased data volume comes challenges around security, privacy and compliance, particularly when individuals are in many cases oblivious to the data actually being created in the first place and when a great deal of benefit to organisations can be derived from the sharing of this data with other interested parties. The ability to deliver an increased number of ever more sophisticated digital platforms to consumers may look attractive to many organisations but it also brings significant challenges around the management and usage of that data.

Currently exploitation of the IoT by many organisations is only scratching the surface and the opportunities that the IoT could deliver to businesses are only bounded by how today's requirements are perceived. As the IoT matures and organisations begin to understand its potential in more detail those opportunities will grow at a significantly accelerated rate, bringing with them increased data management requirements and issues.

By its very nature the IoT generates vast amounts of data (see Fig 10) and like all data if it is to have any business value then organisations will have to be in a position to understand, store, protect, share, analyse, align and maintain compliance around it.

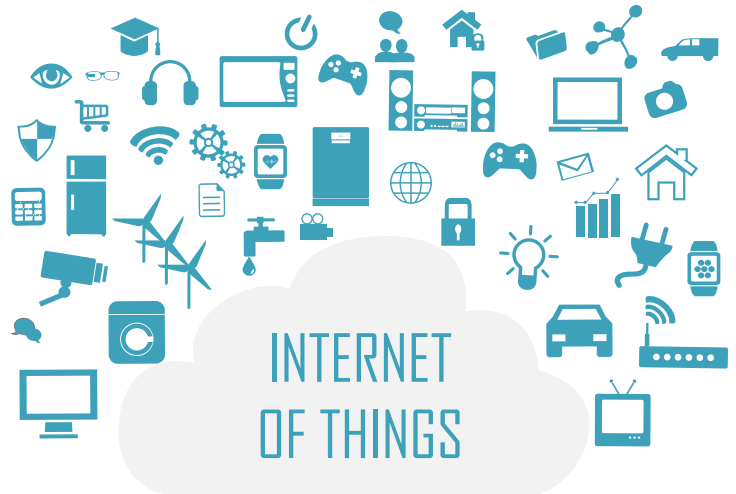


Fig 10: The IoT creates huge volumes of data that organisations will need to address.

## CLOUD COMPUTING

Data accessibility is a core component for many organisations looking to embrace and benefit from the technological developments that are currently available to them. The key to this accessibility is the provision of a reliable, agile and flexible platform that can service business needs while remaining cost effective. With this in mind many organisations are looking to cloud technologies and service models to address these requirements.

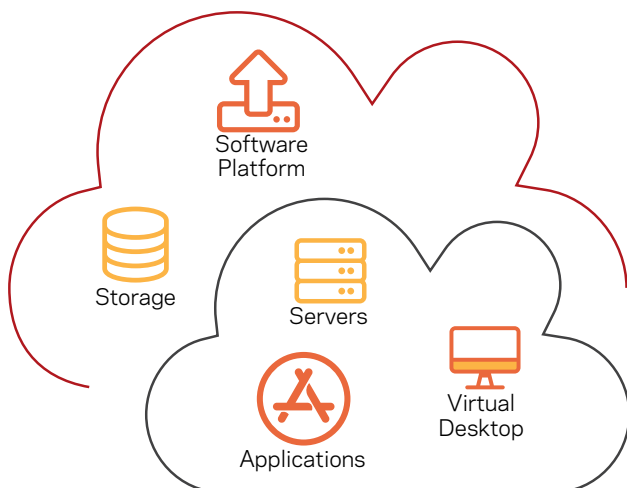


Figure 11: The cloud has the ability to dramatically change IT for many organisations

The attractiveness of the cloud centres around an organisation's ability to leverage the power and performance of an enterprise-grade IT infrastructure without the capital expenditure of managing and maintaining their own environment, while being able quickly accommodate both peaks and troughs within their compute requirements. Given the versatility of cloud solutions to host a wide variety of data as well as the potential cost savings moving to the cloud can bring, means that these solutions have the ability to dramatically change how many organisations view IT within the context of their business requirements (see Fig 11).

However, the key to a successful cloud deployment is the understanding of the data. This is because upon detailed analysis when all the data functionality required by the business is factored into the cost model, the savings may not be as great

as first thought (or even exist at all). In addition to this, not all data (especially data from legacy environments) will be suitable to reside within a cloud solution nor will the cloud solution always be capable of delivering against specific business requirements e.g. some applications and services that have very low RPO and RTO requirements.

## DATA MONETARISATION

In today's information driven society, data now has a significant monetary value, as we stated in the introduction, data is now an organisations most important business asset and the ability of an organisation to extract the value from its data and use it successfully is key to that organisation being able to deliver against its business strategy, achieve its objectives and maintain compliance.

If there is any doubt about the value of data, all of Fortune 500's 'Value Rank' (i.e. the perceived investment value of the company as opposed to its overall revenue) top five places are occupied by organisations who, to a greater or lesser degree have built their business model on data (see Fig 12). Even though four of the organisations listed are categorised as technology companies they operate in different areas and have different business models. Apple is predominantly product based, Alphabet (parent company of Google) despite having fingers in many different pies is still in essence a media organisation, Microsoft centres around software, while Facebook is a social network.

Value Rank	Company	Market Value (US\$)	Business Sector	Revenue (\$US)	F500 Rank
1	Apple	921B	Technology	229B	4
2	Amazon	765B	Retail	178B	8
3	Alphabet	750B	Technology	111B	22
4	Microsoft	746B	Technology	90B	30
5	Facebook	531B	Technology	41B	76

Figure 12: Fortune 500's highest Value Ranked organisations for 2018. (Source Fortune 500)

According to a recent McKinsey Global Survey on data and analytics, data monetisation correlates to an impact on business performance. High-performing organisations (i.e. ones with annual growth rates of 10 percent or more over the past 3 years) were more likely to say that they are already monetising data and are doing so in more diverse ways, these include the addition of new services and products to existing offerings, the development of entirely new business models, as well as partnering with other organisations in related industries to create pools of shared data.

Within data monetarisation there are two key areas:

- Firstly, the data is valuable to the company who owns it and therefore that data increases the organisations overall worth.
- Secondly, the data has value to outside organisations which allows the organisation holding the data to generate significant revenue through the selling of that data to third-parties.

Looking in more detail at the first point whereby companies are being highly valued simply for the data that they possess. This had led to many organisations now being bought and sold simply for the value that their data brings. For example, in 2016 IBM bought 'The Weather Company', this acquisition had many analysts wondering why, the simple answer is 'the value of the data'. The purchase (at around \$2B) has not only given IBM a vast amount of data from almost 200,000 weather stations it has also given them access to over 5,000 of the Weather Company's customers, spread across multiple locations and industries. These organisations are heavily dependent on accurate weather forecasts and IBM now intends to generate potentially significant revenue by providing customers with short-term personalised forecasts, it is thought that the service (dubbed Deep Thunder) will form part of a growing suite of products potentially offered to customers through IBM's Watson arm.

IBM are not alone, in recent years we have seen Microsoft acquiring LinkedIn (\$26.2B), Google acquiring DeepMind (\$500M) and Facebook acquiring Face.com (\$60M), the common theme across all of these purchases is 'data', either the direct purchase of vast data-sets or the purchase of technology that will enhance that organisations ability to further understand, analyse and monetarise their data.

Taking the second point of data being of significant value to third parties. There are many examples of where this practice takes place, from supermarket loyalty cards selling people's shopping habits, to credit card companies selling the information contained within transactional data and technology product companies selling a myriad of data created by thousands of applications that are installed on both their own and consumers devices covering everything from health, biometrics, leisure, travel, insurance, banking and education, to name but a few. The volumes and complexities of these data sets are vast and those volumes and complexities are set to grow almost exponentially when we start factoring in the sensor data that is being generated by an increasing number of machines and products, from household appliances to even the clothes we wear.

The key to the successful data monetarisation is the ability for an organisation to focus on the relevant data (i.e. the data that has the ability to generate revenue) as opposed to trying to monetarise all of its data. This is because the ratio of the volume of data that is currently residing in many organisations to their available resources, make this not only an extremely expensive task but one that can be so time consuming as to when the useful information is eventually extracted much of its value has diminished.

However, in order to be able to focus on the correct data, that data first has to form part of a detailed and company-wide data strategy, only then can it be fully understood within the appropriate context and correctly aligned to the organisation in order to deliver the expected business benefits and with today's increased levels of legislation maintain compliant.

## RESOURCES

So far, this White Paper has concentrated on the business and technical side of an organisations data. But successful data management is also very much about the people. Organisations have to also understand that to effectively manage their data and to fully exploit the information that it contains in order to evolve, grow and deliver the products and services demanded by their customers while at all times providing a secure and compliant data environment they have to ensure that they have the 'correct' people in place. People who can design the next generation data solutions, effectively manage the huge volumes of data that is being created, correctly analyse the data in order to extract the valuable information it contains and those who have the vision and drive to lead the digital transformations that are being fueled by the increasing reliance on data, will all be needed by organisations looking to drive their business forward.

Data roles such as consultant, analyst, manager, architect, administrator or scientist are currently at a premium across all business areas and sectors and are set to remain so as even greater emphasis is continually placed on data. A report issued by the European Commission issued said that by 2020 there would be a 160 percent increase in demand for skilled data personnel and that an additional 346,000 data scientists will be required simply to fill the void, these skills gaps will mean that organisations will have to compete not just with their own lines of business but across all business sectors if they wish to recruit and retain the staff needed to ensure effective data management.

Not having the appropriate resources can result in significant negative events within an organisation. One very good example of this is U.S. Bancorp, in 2018 U.S. Bancorp the parent company of U.S. Bank was fined \$613M for having insufficient anti-money-laundering (AML) controls in place. The US Attorney's Office said that U.S. Bancorp's AML program was "*highly inadequate*" and this could be attributed in a large part to a lack of the appropriate staff and resources.

The need for effective leadership when it comes to data extends right to the top for many organisations as many companies are beginning to wake up to the fact that they need someone within a senior position to lead the digital transformations that are being fueled by the increasing business reliance on data. This had led to an increase of around 40 percent since 2015 in the number of organisations that now have a CDO's on their board.

Because of this increased demand for skilled data professionals, organisations will need to ensure that they have the correct recruitment plans, organisational structures, remuneration packages, career paths and retainment plans in place for their data employees across all levels of the organisation if they are to successfully deliver against their business strategy.

The understanding and correct analysis of their data can actually help organisations in this area by not only aiding them in the recruitment of the most appropriate people but to also assisting them in understanding how effective their recruitment channels are, as well as their ability to retain staff.

## SUMMARY

Many of the IT analysts are now talking about data being "*the new oil*." While this may be a somewhat oversimplified statement, there can be no doubt that data is growing at hugely accelerated rates both in terms of volumes and business importance and, given that organisations of all sizes and across all industries hold significant volumes of data, that data and the information it contains is a critical business asset. As an organisations data landscape continues to evolve and grow that data will need to be stored, protected, secured, analysed, shared, aligned and managed in numbers and ways that bear very little resemblance to current business processes and technology infrastructures.

Increased competition across all business sectors as well as new technologies and digital advancements are continually emerging to challenge the ability of organisations to manage their data in the appropriate manner, and, in order to meet these challenges and successfully deliver against their business strategy, organisations are now having to change the way they view and manage their data.

Trying to implement both operational and technological change within organisations places significant strain on the business, the IT infrastructure and the employees. Because of this, organisations need to understand how they are going to react and adapt to these changes to ensure that their short, medium and long-term business objectives are met. Technology which was once seen as the answer to all business problems is now simply one component in a far larger and more complex data environment. Tactical IT solutions are being replaced by strategic ones as organisations are starting to realise that technology on its own is not a panacea to solve their increasingly complex business issues and, in order to address today's data issues a strategic approach has to be taken. Therefore, the key to strategic alignment by the implementation of a company wide data strategy, the correct business changes, coupled with the most appropriate technology solution first lies with the understanding of the data and how it is viewed, aligned and managed within the organisation.

Governments and regulatory bodies have realised that as the volume of data grows and is used within an ever wider commercial context the risk of misuse and criminal activity also increases. Therefore, new legislation has been introduced to protect the interests not only of the organisations holding the data but also the rights of the individual to whom the data refers. The financial and reputational penalties for non-compliance can be significant therefore organisations have to understand all of their data and how it relates to their compliance obligations.

Digital transformation is fueling a booming data economy. Organisations are already investing heavily in the management of their ever-increasing data pools, but many of these organisations are still not leveraging their data in the appropriate manner in order to drive their business forward. Data is now a core asset for organisations when it comes to gaining a competitive advantage, but it is how that data is first understood, managed and then aligned against business objectives which dictates how that organisation performs against its strategic goals. High performing organisations, irrespective of the sector they operate within, have come to realise that the monetising of their data has given them the ability to gain that competitive advantage by allowing them to create and exploit whole new revenue streams within their business.

Organisations now realise that in order to address the business challenges they face they not only need the correct operational and technological solutions in place they also need to have the correct people in place as well, because not having the right data expertise in place constitutes a significant business risk.

This White Paper has shown that the rapid increase of data volumes, maintaining data quality, the strain on existing infrastructures, the increased need for security and privacy, increased legislation, new and emerging technologies, increased competition, the monetisation of data to open up new opportunities as well as the need for employees with the correct data skills, while trying to meet evolving business requirements and strategic objectives is creating significant business issues for many organisations.

However, before any action can be undertaken or issues and requirements addressed, the data first has to be:

- Fully understood within the context of the business
- Correctly aligned to business strategy and managed in the most appropriate and cost-effective way.

It is this understanding, alignment and management of the data that is the key for organisations when it comes to meeting their business objectives.

In conclusion, the understanding of data is vital because data that is not fully understood or correctly aligned not only delivers no business value, it cannot be said to be compliant, this lack of understanding constitutes a significant business risk, be it reputational, financial, operational or legal because the data has then moved from being a significant business asset to become a major business liability. It is within these data areas that Fujitsu and its strategic partner Veritas can work with organisations to enable them to understand, align and achieve compliance around their data, thereby allowing them to exploit its business potential.

## HOW FUJITSU AND VERITAS CAN HELP ORGANISATIONS ADDRESS THEIR DATA REQUIREMENTS

Working together, Fujitsu and our strategic partner Veritas deliver the capabilities that organisations now require in order to meet the significant data challenges that they now face. By taking advantage not only of our combined and extensive data knowledge and experience as well as our complementary technologies and services, organisations, irrespective of size, location or sector can be assured that they will be dealing with a partnership that not only fully understands their business objectives, but also has the combined expertise and integrated product portfolio necessary to meet their most demanding data requirements.

We fully acknowledge that technology will always play a fundamental role when it comes to the management of an organisations data. However, we also recognise that any technology that is deployed, in order to maximise investment and deliver the anticipated business benefits must first be correctly aligned to the immediate business requirements as well as the long-term business strategy relating to that data.

That is why we take a business centric approach to looking at data, from how the data is created and ingested into an organisation, to how it flows and is accessed throughout its lifecycle, down to its business criticality and how it is stored, protected, secured, analysed, shared and maintains compliance. This enables us to build up a detailed data picture which allows for greater data understanding in terms of both business and compliance objectives as well as correct data alignment to business requirements and strategy.

Working in close collaboration Fujitsu and Veritas can help address some of the most pressing data issues faced by organisations in today's rapidly changing data landscape from helping you define your data strategy to ensuring you have the correct people in place to effectively manage and exploit your data:

### Data Management

To combat the data deluge that organisations are currently experiencing and in order to reduce risk by meeting their business and compliance obligations there is a strong requirement to be pre-emptive in data management. Our purpose-built retention management platform allows organisations to execute diverse strategies in order to meet business and regulatory information retention requirements.

- Centralise retention management across e-mail, files, social media, and more.
- Capture all records electronically including voice, SMS and MMS.
- Granular retention periods and WORM storage.
- Scale easily from managing 100s of users to managing 100s of thousands of users.
- Deploy on-premises, in hybrid configurations, or in the cloud.
- Identify suitable data for archive to help improve backup and recovery performance.

### Predictive Analysis

The increased volume and complexity of data coupled with the need for greater understanding and compliance means that organisations cannot afford to address issues after they have occurred. Our predictive analysis solution gives organisations the capability to analyse, track and report on their data, allowing them to deliver organisational accountability for file use as well as security purposes. It can scale to petabytes of data and billions of files giving organisations the ability to comprehensively manage their file requirements, while also integrating with archiving and security solutions to prevent data loss and ensure policy-based data retention.

- Automate governance through workflows and customisation.
- Drive efficiencies and cost savings in an unstructured data environment.
- Maintain regulatory compliance for information access, use, and retention.
- Protect confidential information from unauthorised use and exposure.

### Risk Reduction

Today the IT infrastructure within organisations are fast-growing, often fragmented, and can be extremely complex environments. IT Managers within organisations face daily questions about whether their data is protected appropriately, whether it can or should be deleted, and whether they are exploiting the most cost-effective storage opportunities. Our data visualisation solution helps to

address these challenges by providing an immersive visual experience that offers a complete picture of data across both on-premise legacy environments as well as cloud infrastructures.

- Aggregate a comprehensive view of the global information environment.
- Identify areas of value, areas of risk, and areas of waste.
- Reduce the unnecessary cost of useless data storage.
- Prioritise targets for regulatory compliance and security investigations.

### **Increase Resolution Times**

The legal and compliance regulations faced by organisations require almost immediate responses to any official requests, this time constraint can place significant pressure on both the business and IT. Our eDiscovery solution has a simple, intuitive interface which allows organisations to respond to requests in a timely and detailed manner.

- Deploy a single solution across the entire eDiscovery lifecycle, from legal hold and collections through analysis, review and production.
- Easily map the entire data landscape to locate relevant documents and communications.
- Trigger advanced analytics and machine learning to uncover critical evidence.
- Reduce manual effort and mitigate human error with workflow automation.
- Achieve quick deployment through a purpose-built appliance, software, or hosted as a service.

### **Improved Data Understanding & Business Alignment**

The key for all organisations in achieving a data management capability that can assist them in successfully delivering against their business objectives is a greater understanding of their data and improved data alignment to their business strategy. Our data consultants and architects not only have extensive experience in understanding organisations across diverse business sectors but also the data issues that they are now facing. We have the knowledge and experience to bring together both the business and technology to build up a detailed picture of the data landscape giving organisations a better understanding of their data as well as ensuring that their data is correctly aligned to their business requirements and strategy, this approach has been designed to deliver a number of key business benefits, such as:

- The production of a fully validated up-to-date picture of the current data environment, mapped to both the business and the technology – this can be used as one of the core tools to ensure data compliance.
- The early identification around the suitability of data to reside within any desired technology platform as well as the capability of that platform to meet business requirements.
- The identification of areas where ‘quick wins’ can be easily achieved in order to reduce cost, mitigate risk and improve service levels.
- The production of a strategic roadmap for the data environment based on business objectives and strategy.
- The creation of a set of ‘Guiding Principles’ that will ensure that future requirements and changes to the data environment will be in-line with corporate data strategy.
- The identification of areas where any capital outlay will have maximum effect as well as the ability to effectively structure the data budget over a period of time.
- The identification of areas of wastage within the data environment that is costing money but delivering no discernible business benefit.
- The production of a credible and viable target solutions that meets the data requirements of the business.
- The production of a migration plan to minimise risk when moving from the existing to the proposed solution.
- Identification of the correct resources and required development in order to correctly manage the data.

Because we understand the size of the data issues currently faced by organisations and the pressures that they bring to bear we have made our engagement process simple and flexible to ensure that any organisation we deal with gains the maximum business benefit from engaging with us, an example of a data engagement is outlined below:



**1. Cocreation Workshop**

- Understand key data areas and remedial actions.
- Recommend initial steps towards solution.

**2. Information Governance & Data Management Assessment**

- Identify readiness and maturity with regard to your data management.
- Understand the data and ensure correct alignment to your business and your requirements.
- Evaluate risk against unstructured and personal data.
- Provide business case inputs and remediation action plan.

**3. Deploy the right solutions to meet your business objectives**

- Work closely with you to establish a technology solution to solve your key data challenges.
- Give you greater control over your data by allowing you to Locate, Search, Minimise, Protect, Monitor and Move your data as your business requirement evolve.
- Provide you with a solid data platform allowing you to meet your data requirements and strategy.

**WHY FUJITSU & VERITAS?**

- The Fujitsu and Veritas partnership is based on years of collaboration with a common goal to deliver best in class data management solutions
- The top performance, seamless integration and high flexibility of the products and solutions provided by both partners make life much easier for their customers
- Fujitsu and Veritas offer customers future-proof solutions to meet the challenges posed by unbridled data growth
- Fujitsu and Veritas can help in accelerating digital transformation and solve pressing data and business demands
- You can trust in us to convert your organisations data into a business enabler

[Contact Us](#)[More from Veritas](#)[More from Fujitsu](#)**ABOUT FUJITSU**

Fujitsu is the leading Japanese information and communication technology (ICT) company (and #5 worldwide), offering a full range of technology products, solutions and services. Fujitsu uses its experience and the power of ICT to—along with our customers—shape the future of society. Fortune has named Fujitsu one of “the world’s most admired companies” five years in a row.

**ABOUT VERITAS TECHNOLOGIES LLC**

Veritas Technologies empowers businesses of all sizes to discover the truth in information—their most important digital asset. Using the Veritas platform, customers can accelerate their digital transformation and solve pressing IT and business challenges including multi-cloud data management, data protection, storage optimization, compliance readiness and workload portability—with no cloud vendor lock-in. Eighty-six percent of Fortune 500 companies rely on Veritas today to reveal data insights that drive competitive advantage. Learn more at [www.veritas.com](http://www.veritas.com) or follow us on Twitter at @veritastechllc.

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