LET'S TALK DIGITAL

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ASIAN BANKING SCHOOL

CONTENT

Let's Talk Digital is a monthly newsletter that was created to build awareness on Digital Banking and provide a platform for industry practitioners to share insight and current trends on this exciting subject matter in relation to the Banking and Finance industry.

Big Data Analytics: from Laboratory to Life

By Peter Kua Seng Choy

A primer on big data analytics (BDA) and its celebrated 3Vs – volume, velocity and variety. BDA is only as useful as the value it creates to drive economic prosperity, government efficiency, and social good. Today, BDA is available to anyone who wishes to exploit it to create a better world.

Digital Forensic Readiness in Organizations

By Kayne Hoo Kah Yan

The digital transformation of business processes and operations opens up potential surface of attack for cyber-criminals. Organizations have to step up to be forensically ready so that they will be able to manage cyber incidents effectively by maximizing available digital evidence within their environment. Hence, limiting damage and minimizing costs associated with a breach or compromise.

This article discusses why organizations should be forensically ready and outlines how forensic readiness can be implemented within the organization.

To find out more about the Digital Banking programmes that ABS offers, visit

www.asianbankingschool.com/our-programmes/centre-for-digital-banking

Peter Kua Seng Choy

Peter Kua is currently Head of Data Science and Analytics in Media Prima Digital. His responsibilities include finding ways data can be used as a competitive advantage as well as identifying new business opportunities with data.

Peter was also instrumental in driving the National Big Data Analytics (BDA) Initiative under the Malaysia Digital Economy Corporation (MDEC) in the areas of thought leadership and industry development. He played a key role in developing the first National BDA Framework that delivered strategic recommendations / action plans to achieve the National BDA vision.

Peter has extensive tech-related experience in various roles: Big Data / Data Science Strategy, Technopreneur, CTO, Project Manager and Software Developer. Startup leadership & management style. Excellent communication skills. Solid network of contacts in the private sector, government and universities/colleges.

Kayne Hoo Kah Yan

Kayne Hoo Kah Yan is experienced in project planning, project resource management, digital forensics and penetration testing. She has practical experiences in cyber security incident handling, computer crime investigation and is experienced in performing digital forensics analysis for various cases and in maintaining the chain-of-custody and preparing a court admissible report.

Additionally, she also conducts technical assessments such as vulnerability assessments, host security assessment, network device configuration security assessment and more.

Big Data Analytics: From Laboratory to Life

By Peter Kua Seng Choy

Big data includes a wide variety of large datasets that can be processed and analyzed using big data analytics or BDA. Among big data's most significant features are the 3Vs - Volume, Velocity and Variety.

VOLUME covers the large amounts of data that is produced and amassed by organizations. Over 40 billion videos and photos have been posted on Instagram since its launch; every year, Google handles over two trillion searches, and Netflix users consume over one billion hours of video weekly. BDA must be capable of handling and analyzing the enormous quantities of data that are generated by machines and people.

VELOCITY refers to the speed of data generated today. Data velocity can be best highlighted through social media examples. In a single minute, Twitter sees over half a million tweets, 4.5 million YouTube videos are watched, and Tinder users collectively swipe 1.4 million times. BDA must be capable of analyzing and processing such high-speed data.

VARIETY represents both unstructured and structured data. Unstructured data is unorganized data such as emails, handwritten documents, voicemails, ECG readings and audio recordings. Structured data on the other hand, represents strings, dates and numbers that can be arranged in database-like repositories. Over 80% of all data exists in an unstructured form. BDA needs to be competent in analyzing and processing these datasets, specifically unstructured data.

TRANSFORMING THE 3VS INTO VALUE

Unless value can be obtained to benefit the economy, government and society, big data and BDA are useless.

Organizations employ BDA to gather, process and analyze big data in a bid to gain competitive advantage. They utilize the insights from BDA to make decisions that will increase profits, drive down costs and maximize efficiencies.

Big data analytics can also help a government enhance its competency and productivity. And through BDA's positive effects on the government and the economy, society at large stands to gain.

BDA MADE POSSIBLE FOR EVERYONE TODAY

Big data analytics used to be confined to academic institutions and major R&D houses since only they had the resources to buy the computing power and storage required to perform advanced simulations and predictive analytics.

Today, cheap storage and powerful microprocessors are easily accessible to people who have the data and skills to implement advanced analytics.

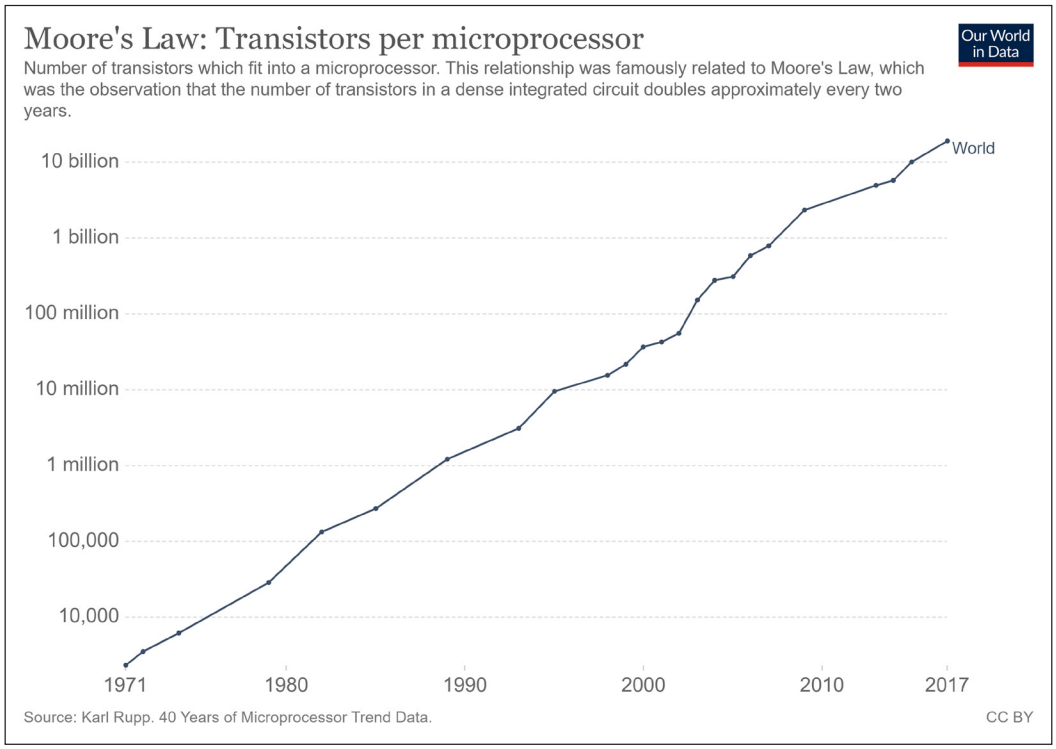


Figure 1: Computing power has doubled every 2 years

Ever since the first 2300-transistor Intel 4004 was introduced in 1971, integrated circuits have doubled their transistor count every two years. To put it simply, computing capabilities have doubled every 2 years. A 6-core Intel i7 microprocessor today contains over 2.6 billion transistors.

This incredible rise in computing power has accelerated BDA. It has enabled high-speed and complex predictive analytics. Advanced technologies like machine learning and deep neural networks require enormous amounts of computer processing power to learn and achieve a high degree of accuracy.

Computer memory prices have fallen drastically as well, which has helped the cause of big data analytics. Lots of storage and data are required for preparing advanced predictive analytic models like artificial neural networks. These models need access to plenty of historical data in order to make accurate forecasts.

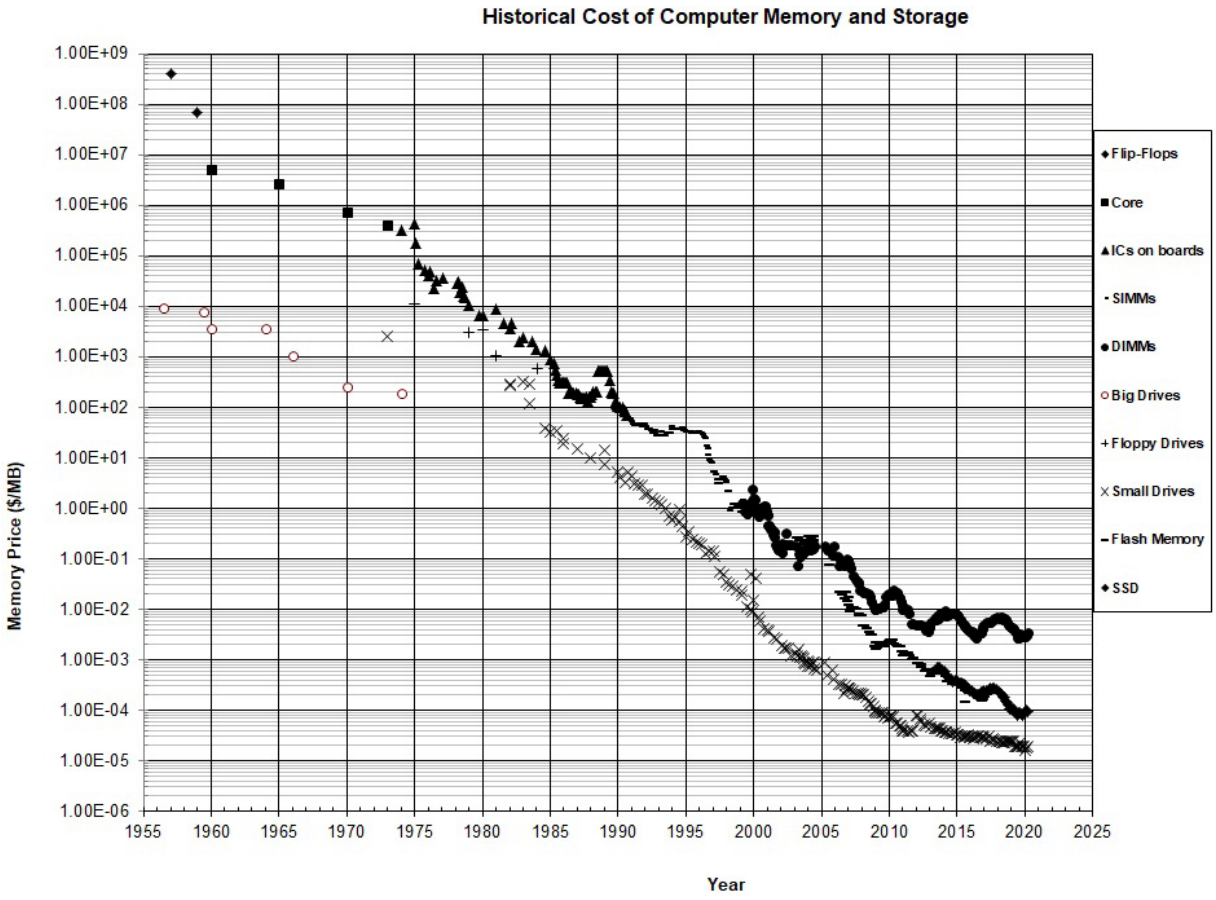


Figure 2: Price of computer storage has drastically fallen since its conception - Source/jcmit.net

Back in the 80s, a 1 GB hard drive would have cost more than $500,000. Now, these drives can be bought for prices less than $0.03 per gigabyte.

Additionally, cloud computing has enabled individuals and organizations to rent the storage and computing power they require for analyzing and processing big data.

Cloud computing has lowered the entry barriers for BDA through its cost-effective pay-per-use business model. Cloud computing frees organizations from having to purchase and manage physical machines, databases and licenses.

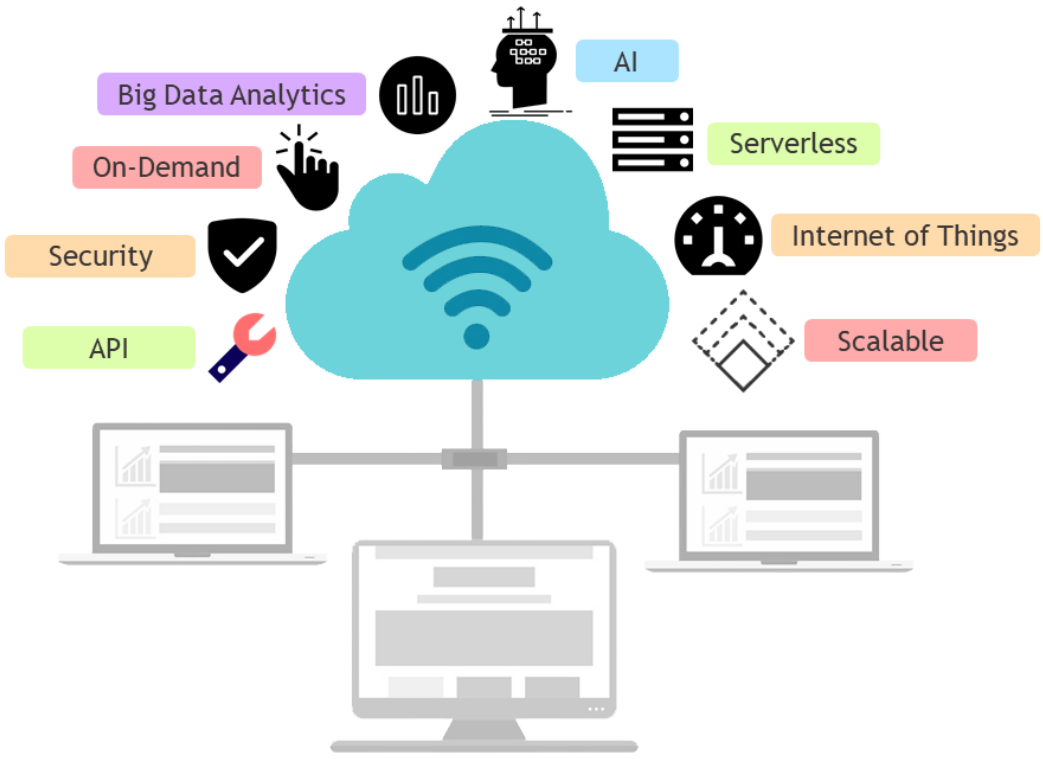


Figure 3: Cloud computing empowers on-demand big data analytics

It is now possible to lease an unlimited amount of computing power and storage. Huge amounts of data can be processed by cloud-based infrastructure. The training and validation of predictive models can also be done on the cloud. Once these intelligent models have been trained and corroborated, the cloud's virtual machines can be terminated.

DIGITAL FORENSIC
READINESS IN ORGANIZATIONS

By Kayne Hoo Kah Yan

Is Your Organization Prepared for CYBER INCIDENTS?

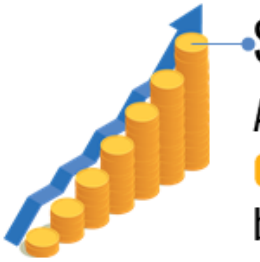
Cyberattacks are **300 times** as likely to hit Financial Institutions than business from other industries

Source: Boston Consulting Group, 20 June 2019. For Wealth Managers, Off Year Sparks Opportunity to Reignite Growth
Overview: https://www.bcg.com/d/press/20june2019-global-wealth-report-222692

In the current trend, the growth of applications and device capabilities to accommodate various online services leads to a higher risk of exposure to cyberattacks. Some common examples of online services include bank transfers, bill payments, online shopping, trip booking, and membership management.

Despite protective measures in place, there is no guarantee that an organization can be risk-free or immune to cyberattacks. These breaches come with a cost as recovering from a breach consumes time and money.

Current approaches for most organizations in incident handling are oriented to business continuity and disaster recovery. As a result, a proper root cause analysis is often overlooked.



$1 8 .3 MILLION Annual cost of CYBERATTACKS by banking industry

Source: The Cost of Cybercrime, conducted by Poneman Institute LLC

Many organizations face difficulties in gathering sufficient quality evidence for a comprehensive investigation to be carried out when an incident happens.

RESPONDENTS do not have formal cyber resilience plan in their organization

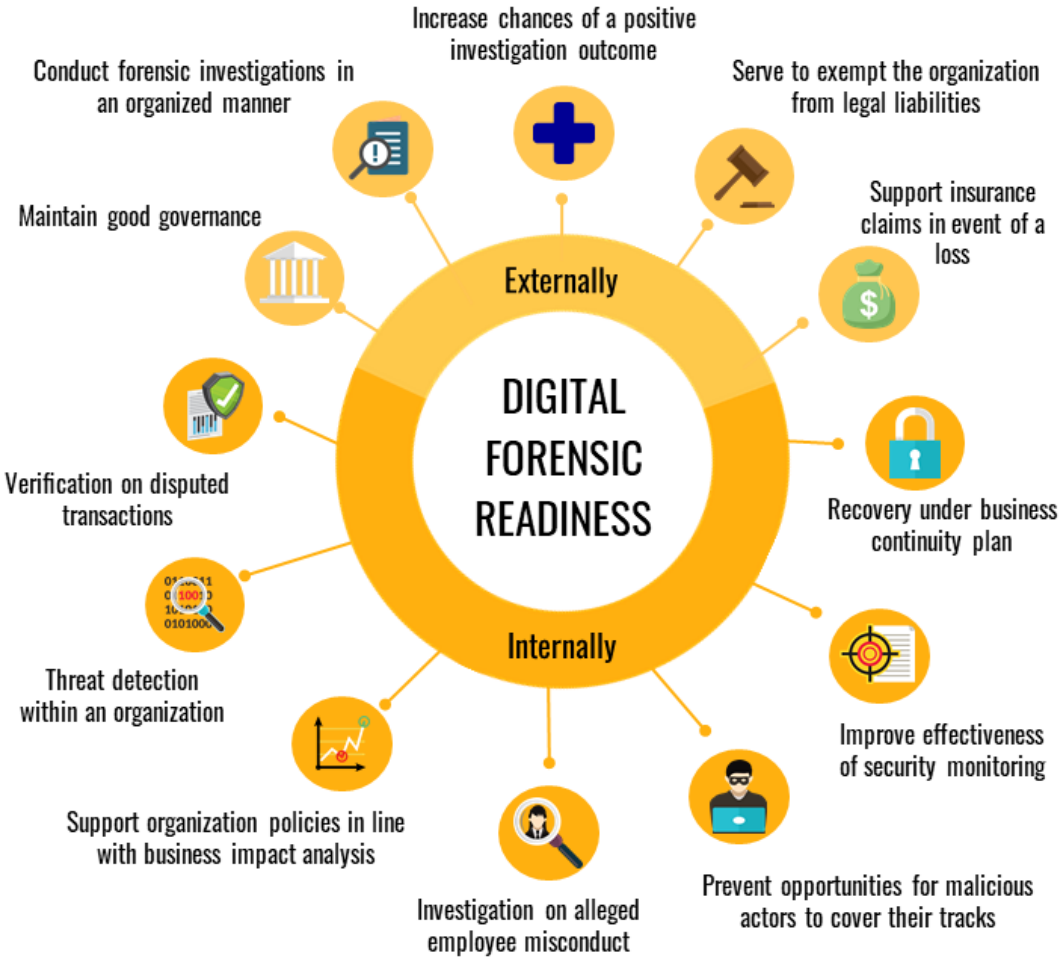
Source: IBM study more than half of organizations with cybersecurity incident response plans fail to test them

Digital forensic readiness can be described as an organization's capability to collect, preserve, and analyze digital evidence.

The objective is to maximize the potential in using digital evidence while minimizing the cost and time required for an investigation.

In other words, it is the condition of being prepared in such a way that digital evidence is appropriately acquired before an incident so that it can be readily available when the need arises without interrupting business operations.

By adopting digital forensic readiness, organizations can leverage this for both external and internal purposes.



In essence, the planning for digital forensic readiness requires identification and assessment of risk areas within an organization and actions to be taken to avoid and minimize the impact of the identified risks.

It should also involve a comprehensive review and analysis of an organization's current security posture, which covers implemented technical controls, policies, procedures, and employee skillset.

Today, increased dependency on information technology for business operations has resulted in the creation of digital footprints which can be used to unravel the specifics of an unexpected incident.

Organizations should shift their focus from reactively approaching incidents to being proactively prepared even before incidents are likely to occur to maximize the potential of investigations that will yield positive outcomes while minimizing time and cost.

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