SPOTLIGHT ON MICROSOFT BUSINESS INTELLIGENCE
We are very pleased to have been given the opportunity to take an objective look at Microsoft’s Business Intelligence capability paying specific attention to Power BI. Over the last 18 months Big Data hype has stolen headlines and mind share and to some extent confused people about whether BI and Big Data are one and the same. BI is a mature market that has been around long before the Big Data boom. However although BI products are mature they are having to rapidly evolve not least because of the demands of Big Data, Social Media and Mobility.

Within this spotlight we have managed to share some expert opinion from Microsoft Executives, provide some generic guidance on what to look for in a BI tool and also take a macro level look at the Microsoft Power BI offering.

BI is becoming increasingly important across the whole work place. It is no longer an IT led purchasing decision. BI is about enabling insight across all lines of business. It has been said many times that “data is the new oil”. Perhaps it is more accurate to say that data is the new “crude oil” and BI is the refinery.

Yours in Data and Storage,
Allan Guiam
Editor Data&Storage Asean
1. Why Malaysian business should care about Business Intelligence

The regional economic uncertainties that continue to plague the US and Europe have had one positive impact to Asia – it has forced businesses to look inward for opportunities. The World Bank forecasts East Asia will experience average growth rates of 7 percent in 2015 – very healthy forecasts that should please most business executives. But the continuing turmoil in the West will also present challenges for Asians – competition from more experienced, better organized enterprises with deeper financial pockets. Indeed, we all have to work harder to protect our revenue, our market share and our future.

Information technology is one area where both governments and business leaders agree the potential to gain competitive advantage. However, what we’ve seen in recent years is that as businesses and services grow in complexity, so too are the technologies supporting these organisations. Unfortunately, this is having a negative impact in some areas of technology adoption. Industry insiders we have spoken to validate our discussions among business users that Malaysian senior management are very cautious when it comes to deploying complex technologies. A good example of this is business intelligence (BI).

Over the years, disparate marketing of solutions have led to confusion over BI technology including confusing it with analytics. While Malaysian firms have no issue investing in technology, the perceived complexity of solutions such as BI have led to some apprehension. The competitive landscape have not helped as vendors all too often have differing interpretation of what constitutes BI technology and the limited standards has left users paying for expensive solutions that may not necessarily be used to the potential owing to misunderstandings at various levels of the user organisation.

On a positive note, the banking and finance, manufacturing and government sectors are the most receptive to BI and also Business Analytics (BA) solutions owing to the explosion of data that firms in these sectors must contend with daily. For the financial sector, it’s about being able to turn this vast data repository into action through deeper insights. Manufacturers wants insight into how to better integrate the components in the manufacturing supply chain and map it against consumption trends to allow for better prediction of what customers will buy. For government, it’s about being more accountable to the public as well as speed to respond to changing public interests and opinion. What is certain is that analytics is a growth opportunity for everyone particularly as customers turn to the cloud to counter the perceived high costs associated with implementing on premise solutions.

Misgivings around BI will decline as vendors learn to speak the language of business. They need to remember that the buyers of BI tools are no longer the IT organisation but business leaders who will champion technologies that will deliver visible return. We are not suggesting vendors to dumb down their marketing but rather to learn to speak the language of the customer. We need to learn from the success of Apple and the iPad – it’s not so much about the technology but the ease with which we are able to use the technology without having to depend on complex training courses or incomprehensible menus. The end goal of BI is to empower business users with knowledge that will drive competitive advantage.

As business guru Peter F. Drucker said “Knowledge has become the key economic resource and the dominant, if not the only, source of competitive advantage.”
2. Big Data or Small Data - its about deeper business insights

There continues to exist, persistent misconceptions about Big Data: what is it, and what is meant to solve. The reality is that in the big data world, the data itself does not have to be big and neither does the analysis need to be.

At Microsoft we are not hung up on the type of data. We are more concerned with understanding the insights you want to achieve. If you have not scratched the surface of the insight your existing data has to offer, do you really expect to benefit from diving straight into a Big Data project?

“Big Data enlightenment” is a journey that begins with knowing your end objective, understanding the data you have on hand, bringing together the tools and skills needed to sift through the pools of data, and discovering the insight underneath layers of data.

This approach means going into the project with your eyes wide open and keeping a close eye on the return on investment you expect to see.

In my role at Microsoft, I see people running into big data projects without having done what we believe is an appropriate amount of due diligence. Has consideration been given to the skills chasm that comes with new technologies? Is the organisation equipped with appropriate analytical tools for the job at hand? Should this project be undertaken in-house or outsourced to ensure maximum potential for success?

At Microsoft we advise people to take a step back and define their end game first. What is the insight they are looking for? Next is the need to assess the data at hand. Only then do we look at identifying the right tools for the job. Our value to customers are the tools, skills and experience we bring to the table to enable companies to get better insight from their existing data today; and to grow with them as their journey to better business insights evolves into more complex data analytics platforms. To use an analogy: we don’t use a hammer to crack a nut; but when a hammer is needed we have it ready!

Gaining better insight from data is a journey of stages. And Microsoft has a comprehensive set of data insight tools to support our customers at all stages of that journey.

The irony about Big Data is that all too often the insights that you are looking for are very specific. You take a massive amount of information and boil it down to answer very specific questions. One end of the journey is the “answer” or “insight” that you are looking for. At the other end is a seemingly limitless expanse of data that grows day in and day out.

Today we want that insight to be at the tip of our fingers, in real time, whilst we are on the move, and presented in a format familiar to us.

Every journey begins with a first step. Our experience suggests that a first attempt at big data should start small. For many people the insight that can be derived from their existing data with a product like Microsoft Power BI is maybe more than they ever imagined.

Dialogues with business users reveal that people want to gain insight but don’t know how to ask for it. Power BI uses a natural language query engine making it easy for business people to probe the data using lingo they are familiar with. In short, Power BI lets business users ask questions.

Recognising that not all information is stored in-house, Power BI can be used to pull in data from outside the company.

A sales manager may ask the question “what is the average medical leave days lost each month in my sales department?” and followed by “how does this compare with the industry average?” Power BI can pull in data from external public data sources to find the answer.

I am often asked whether big data is the death of the traditional structured database. My answer is ”not in our world!”

At Microsoft we understand why data exists in different forms: big and small; unstructured and structured. Many of today’s legacy applications are built around processing structured data for use in activities like asset tracking and transaction processing.

Today, advances in analytics now allow us to repurpose structured data and make it available for completely new types of analytics. Tools like Power BI allow us to “downstream” data to perform personal analysis or feed it “upstream” in a Hadoop based big data environment like Microsoft HD Insights or Microsoft Analytics Platform System.

There is no doubt that Big Data done right provides insight and predictive capabilities like never before. But the learning curve for many can be daunting, and with no guarantee of success the risks can be considerable particularly as you start delving into massive data sources. For this reason, we’ve developed tools like Microsoft HD Insights to enable you to spin up an Azure cloud based Hadoop infrastructure in minutes and start connecting to different data sources such as social media, corporate data, open data sources from government etc.

HD insights give you a cost effective low risk way to start your Big Data journey. As you grow and prove the technology, Microsoft can support this growth, with our Analytics Platform System and with integration between on premise Hadoop clusters with Azure based Hadoop clusters, we can even move you into the realms of machine learning.

My overriding advice is to not get sucked into the Big Data hype. Big Data is real and we have great technology to offer for Big Data requirements if you really have them. However, I want to bring you back to my original point: the issue is not one of Big Data or Small Data. It’s about business insight and application.
3. Choosing the right BI tool

As with any software-based technology solution there is no one product that is right for everyone. This is true with Business Intelligence (BI) where capability, strengths and price points across different products vary significantly. As such choosing the right BI product for your needs requires careful thought, investigation and planning.

The starting point needs to be defining what you want to achieve. Setting the bar this way enables you to define which products under achieve, meet and also exceed the requirements you have for a BI tool.

Once you have managed to define the requirements, which may well differ from user to user within the same organisation, you are then able to assess the different offerings that are available.

The key areas that we recommend need assessing when looking for a BI tool are as follows:

Ease of use
A BI tool is a business tool and therefore should be put into the hands of business people, not IT experts or Mathematicians. A BI tool needs to be intuitive, quick to learn and easy to work with so that business people can ask the questions they need. Use of business language rather than technical jargon will enable business users to more readily use the technology.

Multiple data sources
Business Intelligence delivers insight by analysing data. The more data sources that can be pulled together the deeper the insight the tool can deliver. Even within a company data is stored in separate silos and different applications. Just as important, data outside of the corporate walls can also be useful in gaining deeper understanding.

Mobile and real time
Today’s executives are highly mobile, they need access to dashboards and data whilst on the move and in meetings. In addition the speed of business and of decision making is such that the reports being viewed need to be as current as possible. For a growing number of business managers, looking at business data from last month or last week is no longer acceptable. Data needs to be viewed in real-time and on the move. Portability and mobility are essential requirements for today’s actively mobile organisation.

Cost effective
Affordability is always a relative concept. We see two areas for consideration here: power users whose application of BI can lead to huge costs saving or massive competitive advantage and “everyone else”. For the power users spending the extra money on a more powerful tool can be justified. But increasingly today BI is about empowering every line of business and potentially every individual in that line of business. Some BI tools have reached a price point today where “everyone” in an organisation can be empowered with BI cost effectively.

Visualisation
Visualisation is one of the most powerful features of modern day BI. It’s not about beautifying a bar diagram or pie chart. It is far more important than that! Visualisation shows you patterns in your data that you simply cannot see by staring at columns and rows of numbers. Visualisation when done correctly points you to insights you may otherwise missed with conventional table matrices.

Collaborative capability
BI needs to be shared. Sharing is not just about making a report visible for someone else to see. It’s about sharing the workload and collaborating on the actual querying of data, and building on the work your colleagues have done. These days collaboration needs to be cloud-based, supports mobile and is done in real-time.

Pivot table capability
Pivot tables extract, organise and summarise data from multiple sources. They are a powerful way of spotting trends and making comparisons, with the capability to reveal insights that are otherwise “hidden”. Most every day users do not have the ability to build their own pivot tables using a spreadsheet. A BI tool should make the process simple and as automated as possible.

Regular updates
Today’s “speed of business” is incredibly fast. Sources of business data are evolving and the competitive landscape moves faster than before. BI tools need to keep up with the pace of change of business. As such you need to be sure that your chosen BI provider has a history of updates and a future vision for their product.
4. Living in a data democracy - the democratisation of data

Authored by: Arun Ulag, General Manager, Cloud & Enterprise Division, Microsoft Asia Pacific

“It has been said that democracy is the worst form of government except all the others that have been tried.” Winston Churchill 1874-1965

“The fundamental principle around democratising data is the shift in power away from this large institution to individuals.” Vivek Kundra, the first US Federal Government Chief Information Officer

The aim of a political democracy is to share power and control amongst “the masses”. When we talk about the democratisation of data, we are talking about putting the power of business data into the hands of the people that need it.

As per Churchill’s wisdom quoted above, democratisation is not always perfect. But when it comes to data if it’s done right it can transform the speed and impact of business decision making.

Data is fundamental to making informed business decisions. Every day we make decisions that affect our personal and working lives. The single biggest limiting factor to making timely, accurate and relevant decisions is having access to the right data at the right time and knowing what to make of that data when we have it.

It is only in very recent times that we have been able to put data directly in the hands of the business decision makers in a form they can work with. In the past IT professionals and analysts were the “data alchemists” to whom the business people submitted questions. Implicit in this dynamic was time lag. Time was lost as data and questions were passed back and forth between the business and the IT team.

The gap between the business and IT also meant “things can get lost in the translation” with the result being the question answered by IT is not the question that was asked by the business.

Microsoft understands that democratisation of data is absolutely key to gaining competitive edge and improved decision making. We believe that putting the power of data at the fingertips of the people who run the business is imperative. Modern day speed of business places new demands on decision-making.

Professionals do business on the move, and as a result the supporting data that is accessed, created, and manipulated has to be as mobile as those business professionals.

Democratising of data starts with having data at your fingertips wherever you are. For instance, we recently launched Surface Pro 3, the only device to deliver laptop capability and tablet convenience in one device, giving business professionals mobile fluid access to view and query data. Its evidence of our joined up thinking, democratising data starts with having devices that meet technical requirement and lifestyle demands.

Business people have long used tools like excel, but most aren’t able to exploit the full power of these products. They do not have the time to master writing macros and scripts. They can get access to data, but cannot gain full insight from it. Enter Power BI.

Power BI is the democratisation of data enabler. This addition to Office 365 is the mechanism, which truly puts the power of data into the hands of any and every business professional.

Power BI builds on the office products everyone knows and loves but facilitates a new dimension of analytics and insight for all.

Power BI can pull data from multiple sources both inside and outside the organisation into the hands of each individual user. Once that data has been pulled together it can be questioned using our amazing Natural Language Query Engine. What does this mean in practice? It means the most IT illiterate exec in your organisation can type in a question in plain English and get their answer delivered instantly.

Rewind a few years for a comparative example

A sales director driving to work is “tipped off” that his CEO is on the rampage wanting to know about new customer take on and how it compares to the rest of the industry. The sales director would have called into the office and push his managers to get all the information to him in time for when he sees the CEO. This would then get pushed to the IT staff, who would have to trawl through internal data, spreadsheets, sales reports, and perhaps the internet to get as much information collated.

Fast forward to a time when the company has become “data democratised”

The same sales director gets the same tip off; he picks up his Surface Pro; opens the Power BI and asks “How many new customers did we sign up this quarter and how did that compare to our competitors?” He can then share that report with his CEO before he arrives at the office.

The example is somewhat “tongue in cheek” but the point it makes is valid; a company that can democratisse its data transforms company intelligence and knowledge. The power we are able to put at the fingertips of the people at the sharp end of your business is truly transformative.
Business Intelligence (BI) is about enabling people to gain insights from data. For an organisation to truly benefit from the innovation, BI capability needs to be placed in the hands of the people that run lines of business.

In this respect Microsoft is the undisputed leader in this field but not with a specific BI product but rather with Microsoft Excel. Today Excel is the most widely used business intelligence tool. Every specialist BI provider knows that the single biggest competitor they face is Excel. No one including Microsoft would claim that Excel is a BI product, but the reality is that the vast majority of users that are attempting to conduct BI analysis are trying to do so with Excel.

For most users when they see the level of insight, collaboration and analysis that can achieve with a purpose-built BI tool, they realise that a spreadsheet is not nearly as powerful or intuitive enough to deliver true BI experience. But seamless migration of data and skills from Excel helps accelerate learning and productivity.

DSA took time to assess Power BI from Microsoft in order to help position it in a competitive and varied market space.

Microsoft advantages

Being part of the total Microsoft portfolio lends tangible advantages to Power BI. We have seen numerous “comparisons” of Power BI vs other BI products that tend to view Power BI in isolation. We believe it is a mistake to do so. The benefits of being part of the Microsoft portfolio are real and should form part of decision-making criteria when assessing the Power BI product. The key leverage we see includes:

**Extension of Excel** – Power BI is built into Excel. Spreadsheets are one of the major sources of data feeding a BI product. Power BI scores highly by being totally integrated with the world’s leading spreadsheet.

**Affordability** – for a low monthly fee, users can add Power BI functionality to collaborate with their colleagues and query data with Natural English language – a significant cost and value advantage over other competing products.

**SQL and Azure** – Power BI can integrate into a cloud-based VM running SQL server on Azure providing a fully integrated mobile cloud-based powerful BI environment.

Companies that already have an investment in Microsoft Office or SQL server should consider Power BI as their de-facto BI tool of choice. There may be individual reasons why alternative tools might better to meet a very specific need, but for the typical user in a Microsoft environment, when all factors are considered Power BI is the natural choice.

**Generic considerations**

Notwithstanding hooks into other Microsoft Products, there are clear areas of strength for the Power BI offering, that make it a suitable choice even for companies that are not heavily invested in Microsoft technologies.

When we consider the Four Key questions of BI:

1 - What Happened?
2 - Why Did It Happen?
3 - What Is Happening?
4 - What Will Happen?

DSA rates Power BI as a very strong tool for questions 1 and 2. Microsoft’s total BI offering with SQL, Azure and Cloud-based Hadoop means Microsoft has a strong play across all four key questions.

In addition DSA assesses that Power BI exhibits real strength in the following key areas:

- Collaboration
- Visualisation at the dashboard level
- 3D Mapping
- Natural Query Language
- Quick Analytics
- Best Value Analytics

Whilst Power BI does have powerful features and can be considered for highly specific BI applications, DSA’s verdict is that Power BI’s major advantage is that it provides a price point, ease of use and integration with existing desktop tools to make it the only specialist BI product that can be put into the hands of users at a mass scale inside any organisation.
6. Big Data the “food” of BI

Big Data is a new phenomenon whereas Business Intelligence is not. However the two often go hand in hand and for some people confusion still exists over whether they are one and the same.

Business Intelligence and Big Data are two separate “disciplines” both can be used independent of the other. However the link between the two is important as Big Data can be fed into a BI tool to enable insights that previously were just not possible.

Big Data can be a journey that requires planning experience and implementation of new technologies. It is not just about data that is “big” it is also about collecting data from sources outside of your own IT environment such as social media or government open data sources and combining that with data created under your control.

The technology used to support a Big Data environment such as Hadoop and object based storage are not only new but require a different approach from traditional storage methods that IT managers have used for years.

In addition Big Data projects are not without risk of failure. A famous example is the Google Flu Trends project which has consistently and drastically over estimated Flu cases in its predictions. This has highlighted that creating a Big Data project is not a guarantee of gaining accurate insight.

Big Data can be misinterpreted and sometimes at great expense. As a result for many companies the journey into Big Data should be measured and taken using a step-by-step approach.

Using a Business Intelligence (BI) tool to analyse readily available data is a low cost high reward way to gain deep insight very quickly and is a great starting point in data analytics.

Adding data sources into a BI model can increase accuracy or depth of insight it provides. However the temptation of opening up to the unlimited unstructured data sources promised by Big Data needs to be tempered. The more data you link to the higher the chance that your analysis can be flawed.

A good first stage to increasing the data sources feeding a BI engine is to link to a structured relational database such as Microsoft SQL. Whilst a structured database is not strictly “Big Data”, it can still feed enormous amounts of data into a BI tool. Because the data is structured and very much under the control of your IT department it means the quality of the data is already known and the risk of flawed analysis is minimised.

Working with large databases feeding into a BI tool may be as far as many companies need to go especially if the analysis you seek is largely inward looking.

However the next obvious step after integrating structured data sources is to think about how Big Data might further feed your analytics. Once again this can be done step by step, checking the validity of your findings each time you add an external unstructured data source into the data pool feeding your analysis.

Implementing an on premise Hadoop cluster can be prohibitive because the cost, time and resource are significant and the value of the results can be far from certain.

A sensible step into Big Data is to take advantage of a cloud based infrastructure such as Microsoft’s HD Insights (Hadoop) on Azure. This can be “spun up” in minutes and has the distinct advantage that if it is not delivering as hoped, it can be switched off and the cost charged on usage and the time lost will be minimal.

Such an approach de-risks the first steps into Big Data and also makes it economically viable to take a step-by-step approach. As an example if you are looking to add sentiment from social media to your own in house data, you can do so adding one source at a time and assessing your results before adding further sources. The cloud model removes the pressure of having to Go Big with Big Data from day one.

Over time your confidence in understanding how to gain insight from Big Data sources will improve and using a ready-made cloud based Big Data infrastructure makes this learning curve far less costly and painful.

In the long term you may move to an on premise Big Data approach. However for many the capability of a cloud based solution such as an Azure based SQL and HDInsights set up will be as much as they ever need.

The key is to identify and clearly outline the insight that you want to gain and then use a building block approach to add the data sources that you believe will get you there.
7. Big Data your license to competitive advantage

Arun Ulag, General Manager, Cloud & Enterprise Division, Microsoft Asia Pacific

Sherlock Holmes has two unique qualities: penchant for detail and singular focus. Combined these have given him the competitive advantage over law enforcement and the criminal elements of society.

Competitive advantage is defined as having something that your competitor does not have that is important in a particular situation. Its attributes of price, performance and service have a positive effect on what you are able to offer to your customers which translates to revenue for your company.

It is in this context that businesses today are continually looking for a competitive advantage that would put them at the lead in the race for the customer’s wallet. One area that almost everyone agrees upon is access to information or data.

Most businesses today are collecting large amounts of data. In a posting on the Facebook Engineering page, Facebook processes more than 300 petabytes of data it stores daily for its 1.19 billion monthly active users. But is having access to data the only thing you need to win in this business?

Not so says Albert Einstein who cautions us against excessive data when he said “Not everything that can be counted counts and not everything that counts can be counted.” You need another element in the duopoly to achieve the advantage you seek.

Most businesses today are collecting large amounts of data. In a posting on the Facebook Engineering page, Facebook processes more than 300 petabytes of data it stores daily for its 1.19 billion monthly active users. But is having access to data the only thing you need to win in this business?

Best-in-class leaders use business scorecards across four areas of operations: internal business processes, customer, financial and learning & growth.

Data collected across each of these areas provides business leaders with insight to analyse past performance, optimise present operations, and make strategic decisions for the future. How exactly do you create value from data? How can Big Data improve the way a company operates?

Microsoft is just like any organisation today. We use analytics to uncover business advantages. We have scorecards at all levels within our business groups.

Sales and marketing is arguably where Big Data has had the biggest impact, a game changer, allowing for deeper insights into customer buying behaviour. Big Data gathered from social media, for example, lets marketers develop campaigns that enable for interactive engagements with customers in real time. Marketers in our cloud and enterprise group use analytics to manage the business: identify errors, keep a pulse on sales and marketing performance.

Customer experience is an important aspect of our competitive advantage. The goal of enhanced customer experience permeates many aspects of Microsoft’s operations. For example, in our Xbox team, employees and marketing partners use analytics and the cloud to improve gamer experiences.
The accounting department, long accustomed to working with structured data, can now use unstructured information embedded within accounts payables and accounts receivable to ascertain things like duplicate data, review operating disbursements, and perform more accurate purchasing to payment analysis among others. Big Data in auditing is helping in areas such as fraud detection and prevention, as well as journal entry analysis. Our finance department uses analytics to uncover new ways to manage expenses – new opportunities to save.

Like other organisations, Microsoft is a learning and growing company, and nowhere is this more prevalent than within our HR department which uses analytics to evaluate the quality of college hires. Our team of HR professionals uses Big Data analytics to study employee satisfaction and improve productivity. Otherwise known as people analytics, the application of Big Data within the human resources department is helping innovative companies to measure the effects of workplace variables and allow companies to better engage employees in much the same way that marketers would when connecting to consumers. Data derived from deepening use of social media within the enterprise can now be used to better understand employee behaviour and allow organisations to develop programs and policies to increase staff productivity and loyalty.

Nowhere is Big Data delivering greater value than in the production floor where analytical tools can help improve workplace safety practices and promote operational excellence. Big Data can be used to gain insight into product research, design and development. In the global economy, Big Data can help management gain deeper insight on supply chain variables and how these impact manufacturing facilities, warehouses and inventory from virtually any part of the world.

And finally, at the executive level where speed of decision-making is most critical, insight from Big Data empowers CFOs with deeper insight into the internal and external forces that influence company operations. The integration of Big Data can help management to anticipate the future and allow decision makers to respond more quickly to change both externally and internally.

Beyond the hype of Big Data, real practical applications of big data are making their way into some of the most innovative companies in the world. A 2014 global survey by Accenture on Big Data usage reveals that organisations that have gone ahead with big data projects admit that there still is much to be learned about analytics and the data they gather in the process. Many recognise that Big Data talent is in short supply and bringing in outside expertise is a normal course of action. Finally, the consensus is clear: Big Data brings disruption that can revolutionise business.