Think B-I-G!

SumProduct has been asked to present several times recently on the topic of "Big Data" and it got us thinking back at the office. Is it the next big thing (get it)? Consultants seem to be springing up everywhere presently advocating the importance of the Big Data bandwagon. So what is it, is it necessary to go out and spend zillions or can little ol' Excel still help most of us?

This month's newsletter investigates. Who said, "big deal!"..?

Liam Bastick,
Managing Director, SumProduct

The Data Paradigm

Before discussing the concept of Big Data, let's quickly recap why data is so important to business:

Increasing organisation
increasing meaning(?)

WISDOM — **???**
APPLIED KNOWLEDGE
Books, Programs, Systems,
Churches, Philosophies
Schools Of Thought, Poetry,
Belief Systems, Traditions,
Principles, Truths
Weave. Embody. Discriminate. Synthesize.

KNOWLEDGE — **MAPPING**
ORGANISED INFORMATION
Chapters, Theories, Axioms, Conceptual Frameworks,
Complex Stories, Facts
Structure. Interpret Evaluate. Desconstruct.

INFORMATION — **DESIGN**
LINKED ELEMENTS
Sentences, Paragraphs, Equations, Concepts, Ideas, Questions, Simple Stories
Contextualise. Compare. Converse. Connect. Filter. Prioritise. Order. Frame.

DATA — **VISUALIZATION**
DISCRETE ELEMENTS
Words, Numbers, Code, Tables, Databases
Categorise. Calculate. Collate. Quantity. Collect.

Businesses can spend small fortunes on creating databases but then spend far less on moving that data through the pyramid (see above):

- **Data:** the building block for all levels, this is the collation of text, amounts, etc. in an uncategorised, unformed collection;
- **Information:** this is organised data, linking elements together in a basic manner, e.g. through comparisons, ordering and so on;
- **Knowledge:** this is organised information, creating ordered structures and conceptualframeworks / theories;
- **Wisdom:** this is organised – applied – knowledge, such as paradigms, philosophies and principles / cultures.

If you imagine a book to impart wisdom, then each chapter can be thought of as providing knowledge, with each paragraph turning words (data) into the required information.

Continuing this analogy, Big Data is simply trying to impart wisdom from many, many libraries in an accurate and timely manner.

What is "Big Data"?

Big Data is the term for a collection of data sets so large and complex that it becomes difficult to process using traditional data processing applications. Big Data is difficult to work with using most relational database management systems as it required parallel software running across many servers (some proponents advocate that "...traditional alternatives may require tens of thousands of servers..." and presumably its own ecosystem too...).


Currently, limits on the size of data sets that are feasible to process in a reasonable amount of time are on the order of exabytes of data. So what is an "exabyte"? Consider the following:

1 kilobyte (KB)	= 1,024 bytes
1 megabyte (1MB)	= 1,024 KB
1 gigabyte (1GB)	= 1,024 MB
1 terabyte (1TB)	= 1,024 GB
1 petabyte (1PB)	= 1,024 TB
1 exabyte (1EB)	= 1,024 PB
i.e. **1 exabyte (1EB)**	**= 1,152,921,504,606,846,976 bytes**

Let's say that again: one quintillion, one hundred and fifty-two quadrillion, nine hundred and twenty-one trillion, five hundred and four billion, six hundred and six million, eight hundred and forty-six thousand, nine hundred and seventy-six bytes. That is the equivalent of 157.1MB of information on every man, woman and child presently walking this earth. Not sure about you, but here at SumProduct, we don't think we are that interesting.

To put it all in perspective:
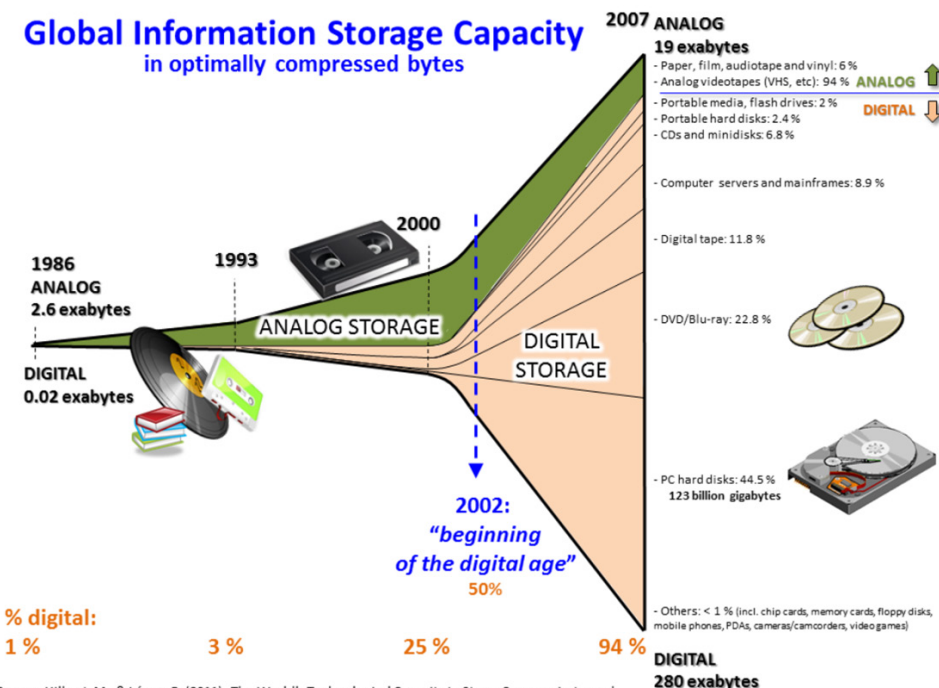
Granted this well-known graphic may be a few years out of date now, but it still highlights how wrong a certain statement attributed to a certain Mr. William Henry Gates III back in 1981 is ("No-one will ever need more than 640KB..."). No wonder he continues to maintain denying he ever said it. Whatever, it makes a great urban myth.

Let's imagine the world uses 500 exabytes now: that still means at most only 500 companies worldwide would require a Big Data solution. There are definitely candidates out there, such as Facebook, eBay, certain cellular companies and so on and there are certainly robust Big Data solutions in existence such as Hadoop, MongoDB and Splunk (although it doesn't half sound like acountry music act!).

But what about the rest of us that don't require our own islands to store our data? Microsoft is clearly targeting at least the smaller and medium end of the business market's data requirements with it "self-service business intelligence suite", Power BI, which we have talked about previously – and we think it might be good to provide a timely reminder of several key add-ins...

Power Pivot

First introduced as a free add-in in Excel 2010, and to be honest, slightly more difficult to find in Excel 2013 (let's not go there this newsletter...), Power Pivot replaces and improves the SQL Server Analysis Services for Microsoft's Business Intelligence (BI) suite. Put simply, Power Pivot is PivotTables on steroids. It extends the capabilities of the PivotTable data summarisation and crosstabulation feature by introducing the ability to import data from multiple sources.
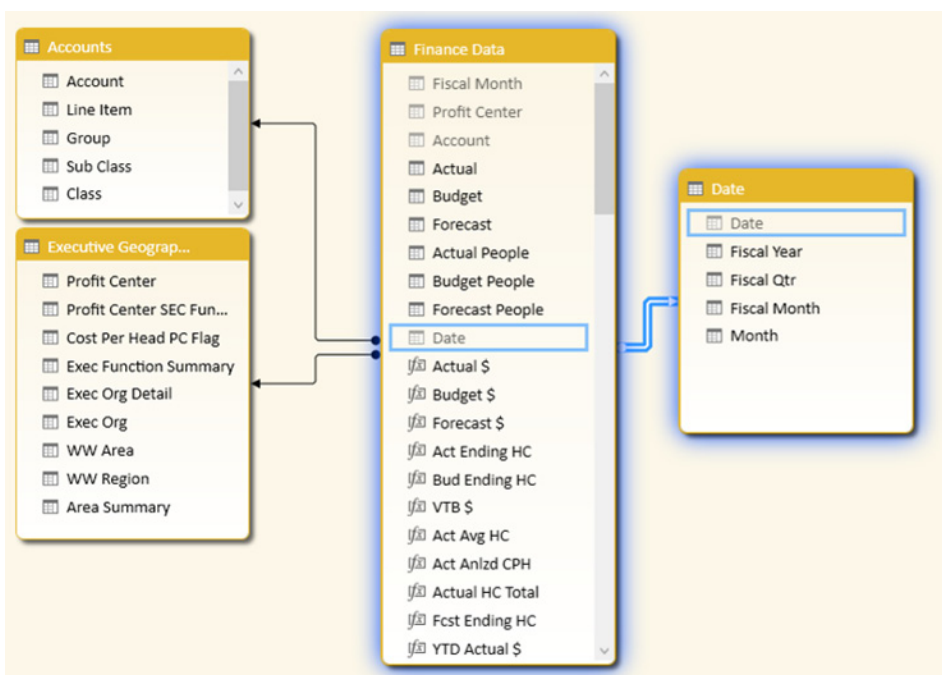
Simply put, it allows you to do things you couldn't do before.

As a self-service BI product PowerPivot is intended to allow users with no specialised BI or analytics training to develop data models and calculations, sharing them either directly or through SharePoint document libraries. But it doesn't end there. For more sophisticated users, PowerPivot can:

- create your own BI solutions without purchasing expensive software
- manipulate large data sets quickly, even if it consists of millions of rows (Excel can't do that!)
- construct complex what-if reporting systems with data modelling and Data Analysis Expressions (DAX)

Imagine analysing your monthly results in real time without an army of management accountants /consultants spending valuable time and money constructing delayed, unfathomable reports. Did we say "imagine"? You might be doing this already. How useful would it be for you and your colleagues to produce key analysis in seconds from automated reports talking to your existing management information systems?

SumProduct can provide training courses and / or PowerPivot consulting for all of your business needs. For more information, why not drop us a line at contact@sumproduct.com. In fact, we have some coming up in the very near future... (please see www.sumproduct.com/training)

Power Query

Like PowerPivot, Microsoft Power Query is another Excel add-in that enhances the self-service Business Intelligence experience in Excel by enabling customers to easily search / access data, either internal or external, all from the confines of Excel.

Previously known as "Data Explorer", Power Query assists users to discover, combine, and refine data for better analysis in Excel and includes a public search feature – which has made for great demonstration examples at some of our presentations / training courses:

We have found it very simple to use, downloading data tables into Excel in a matter of seconds.

With the ability to shape data from multiple sources, it is a useful tool to help build custom data sets quickly. Further information may be found at http://office.microsoft.com/en-us/excel/downloaddata-explorer-for-excel-FX104018616.aspx).
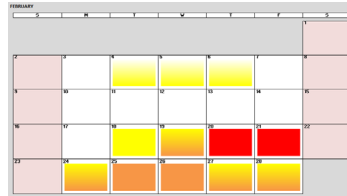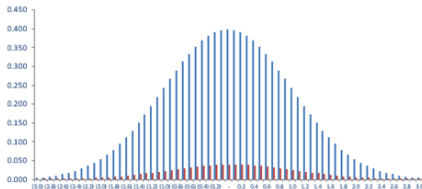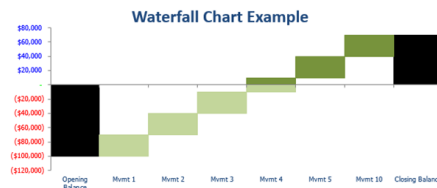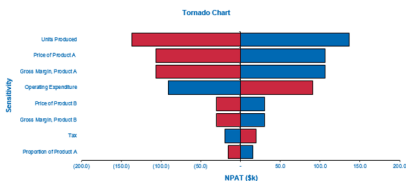
Power View

Power View provides intuitive ad-hoc reporting for business users such as data analysts, business decision maker, finance staff and anyone else requiring visualisation of quantitative analysis.

Pretty much a 'drag and drop' one-stop shop, Power View allows modellers and users alike to easily create and interact with views of data from data models based on Power Pivot workbooks or tabular models. It allows dynamic executive summary-style Excel dashboards to be created in seconds and brings together other elements of Microsoft's Power BI suite.

It is acknowledged that it does have some limitations, but on a simple bang for buck basis, it isn't a bad start for creating quick summaries compared to its much more expensive counterparts. If you'd like to know more, drop us a line or visit https://www.microsoft.com/en-us/bi/Products/PowerView.aspx.

But do remember...

Sometimes, Excel is all you need. It is true that Excel has many limitations (e.g. number of rows / columns, linking) and should not be viewed as a substitute for a 'solid' database, but there is plenty you can do with the spreadsheet, creating Tables, PivotTables and even generating informative analysis:

Upcoming SumProduct Training Courses

Kuala Lumpur 19th-22nd May 2014:
Strategic Planning, Budgeting & Forecasting

Sydney 27th May 2014:
Introduction to Power Pivot

Brisbane 28th May 2014:
Introduction to Power Pivot

Melbourne 29th May 2014:
Introduction to Power Pivot

Hong Kong 10th-13th Jun 2014:
Strategic Planning, Forecasting & Budgeting

Perth 21st-22nd Jul 2014:
Financial Modelling Fundamentals

Melbourne 10th-11th Sep 2014:
Financial Modelling Fundamentals

Kuala Lumpur 13th-17th Oct 2014:
Accounting, Finance & Decision-Making

Kuala Lumpur 20th-22nd Oct 2014:
Financial Modelling

Singapore 18th-21st Nov 2014:
Strategic Planning, Forecasting & Budgeting

Key Strokes

Each newsletter, we'd like to introduce you to several useful keystrokes you may or may not be aware of. This month we look at useful ones for data management:

Keystroke	What it does
CTRL + SHIFT + L	Toggle AutoFilter
ALT + N + T	Insert Table
ALT + N + V	Insert PivotTable
ALT + D + P	Activate PivotTable wizard (old Excel 2003 wizard)

There are over 540 keyboard shortcuts in Excel. For a comprehensive list, please download our Excel file at http://www.sumproduct.com/thought/keyboard-shortcuts.

Our Services

We have undertaken a vast array of assignments over the years, including:

· **Business planning**
· **Building three-way integrated financial statement projections**
· **Independent expert reviews**
· **Key driver analysis**
· **Model reviews / audits for internal and external purposes**
· **M&A work**
· **Model scoping**
· **Project finance**
· **Real options analysis**
· **Refinancing / restructuring**
· **Strategic modelling**
· **Valuations**
· **Working capital management**

If you require modelling assistance of any kind, please do not hesitate to contact us at contact@sumproduct.com.

Spread the Big Word

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Any Questions?

If you have any tips, comments or queries for future newsletters, we'd be delighted to hear from you. Please drop us a line at newsletter@sumproduct.com.

Training

SumProduct offers a wide range of training courses, aimed at finance professionals and budding Excel experts. Courses include Excel Tricks & Tips, Financial Modelling 101, Introduction to Forecasting and M&A Modelling.

Check out our more popular courses in our training brochure:

Drop us a line at training@sumproduct.com for a copy of the brochure or download it directly from http://www.sumproduct.com/training.