DQ GLOBAL
DRIVING **DATA** QUALITY

Data Foundations: Building our Future

Wednesday, 10 June 2020

Foundations

Foundations, simply by their very definition are the bedrock of everything we do. Anything built; a building, a company, a government or even decisions must be built on some sort of foundations. These foundations can be composed of many different things, stone for buildings, the free market for companies, principles for governments and neural patterns for decisions.

However, as we progress through the 21ˢᵗ century we are now beginning to see a new foundation upon which we are building - Data.

Take for example, businesses. Nowadays we look into a target market, we do the analysis, we run the numbers and we identify that there is an opportunity there. We then proceed to build a business, all based on that data.

Even governments are being built upon data. Take the Trump administration, data played a huge role in his election as president in 2016 through Cambridge Analytica.

So then, as data is becoming the bedrock upon which we are building the world. Are we sure that the foundations are solid? Can we trust that the data will not crumble under the weight of our expectations?

DIKW - The Data Building

When we are building upon data, often we are building what is known as a DIKW model, referring to a pyramid structure of Data, Information, Knowledge and Wisdom. Data acts as the foundation and the goal is to obtain wisdom by building up level by level. These pyramids can also be referred to as 'Data Buildings'

From raw data, we obtain information, from this information, we obtain knowledge and from this knowledge, we gain wisdom. In business terms, this wisdom is often referred to as business insight, enabling decision makers to strategically plan important decisions and in many cases, business decisions.

These 'Data Buildings' are becoming integral to much of what we do, however, as with many other buildings, if the foundations are slightly off, the pinnacle of the building will be far from where we were intending.
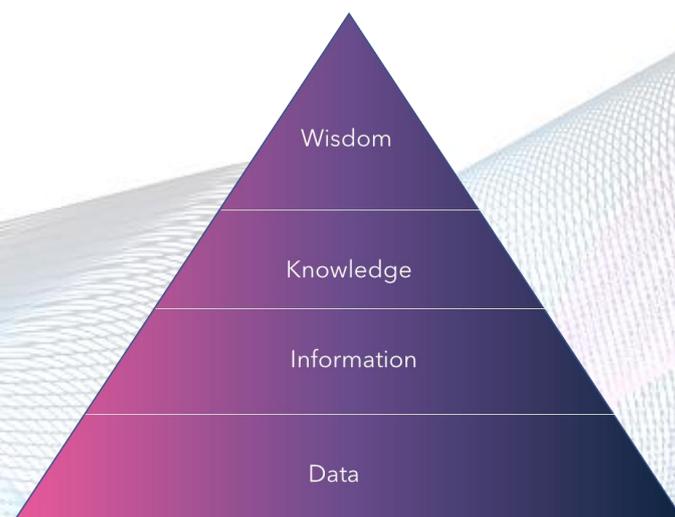
*Figure 1 - DIKW Pyramid or 'Data Building'*

Data Foundations

Let us now consider the similarities between using data and concrete as foundations for decision making and towers respectively. If the concrete foundations of the tower are broken or defective in any way, then it leads to a structurally unsound and unsafe tower. The Leaning Tower of Pisa is a good example of this, whilst a highly popular tourist destination, the tower was built on poor foundations and is structurally unsound. Years after the tower was built, remedial work had to be completed to ensure the tower would remain standing.

Similarly, if we make decisions based on poor data then the end result will be far from our intended outcomes, and we will not achieve what we set out to do.

If we link back to the DIKW model from the previous section, when we build a 'Data Building' on poor data foundations, much like the leaning tower of Pisa, the pinnacle is not quite where we would expect it to be. The wisdom we gain is far from the truth.

Much like building anything, it is therefore incredibly important to ensure that our data foundations are solid.
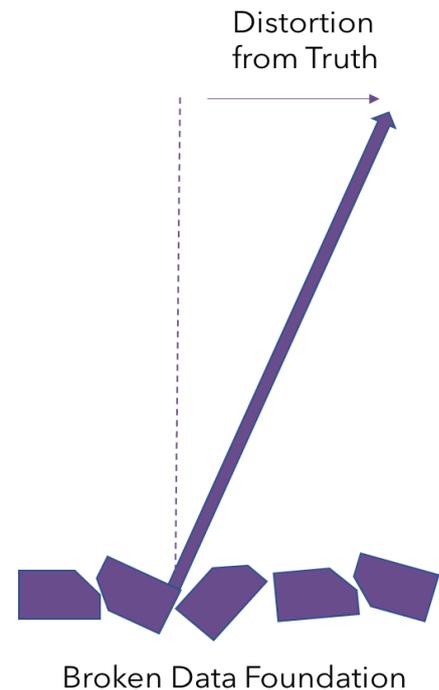
Figure 2 - Broken Data Foundations

A Business Use Case

In order to take a better look at how a poor data foundation can lead to poor wisdom and insight, here is a hypothetical story about a two software giants.

Let me Introduce you to the IT Giants 'Comsoft' based in Seattle, Washington and its former Competitor 'Pear Systems' based in Cupertino, California. I say former because Comsoft recently acquired Pear Systems in a strategic move to bring more customers under the same roof.

On integrating the two companies IT systems, Comsoft analysts notice that their customer base has gone up from 100,000 customers to 200,000 customers. This is the 'data' in the DIKW model.

The information deduced is that Comsoft's customer base has now increased by 100%, it has doubled in size.

The knowledge gained here is that because each customer must renew its software license yearly, and all customers are now on the same pricing model, Comsoft's yearly revenue should now double.

In order for the acquisition to be a success, revenue in year one needed to increase by at least 75%. It would therefore seem that the acquisition has been a great success, easily beating targets with revenue doubling.

In response, Comsoft's board of directors start to look at where they can spend their new revenue. Since this acquisition was seemingly successful, they start negotiating with their next largest competitor 'IMB' for an equally large acquisition.

This however may not be a wise decision… Let's take another look at the data foundations…

What Comsoft didn't realise when integrating their systems with Pear Systems is that they actually shared 40% of the same customers. This led to 40,000 duplicates in their end system. Leading to an increase in their customer base of 60% rather than 100%.

This would therefore lead to an increase in revenue of 60%, which is 40% less than predicted and 15% less than necessary for this deal to be a success.

This meant that the previous knowledge regarding a doubling of revenue was incorrect, and the wisdom acted upon by the board to enter negotiations to buy 'IMB' was foolish.

Because the data foundations were wrong, Comsoft are taking a risky and potentially ruinous strategic direction in looking to acquire another competitor. Instead, they should be focusing on how to improve their current situation.

Figure 3 - Customer Crossover

This could have damaging consequences for Comsoft and they will get a serious shock when the accounts department report that their revenue predictions are completely off. Shareholders will be hugely disgruntled, questions will be asked of leadership, jobs will be lost and the future of the company could be in jeopardy. All because the data foundations were off.
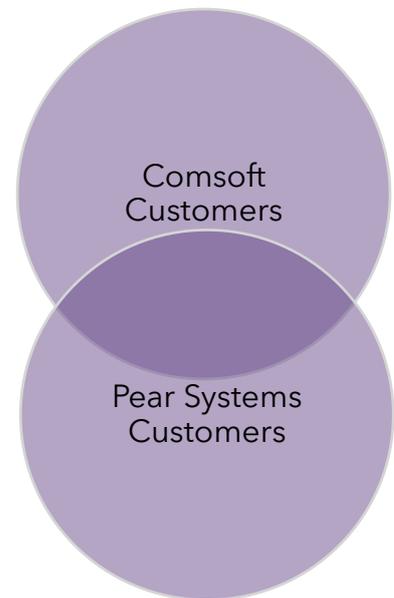
Conclusion

So much of what we do nowadays is built on data foundations. These foundations are often built upon to form a 'Data Building' based on the DIKW model. In this model, data is built upon to reach the ultimate goal of wisdom or insight.

However, if the data foundations are broken or flawed then the wisdom/insight gained will be far off from the truth. This can therefore lead to some serious problems.

Some cases of broken data foundations can be found when companies make poor decisions based on poor data, resulting in dire consequences for their business.

Moving forward, we must ensure the high quality of our data in order to ensure the foundations we build our future upon are strong. Our future depends on it.

About DQ Global

DQ Global provides a complete range of data management services which enable forward thinking managers to solve problems at every level and every stage of their data management journey.

We believe that everyone should have data they can trust.

Take a look at our website to learn a bit more about how we can help you.

Merlin House, 4 Meteor Way, Lee-on-the-Solent, Hampshire, PO13 9FU

UK/EU +44 (0)23 9298 8303
USA +1 (312) 253 7873

http://www.dqglobal.com
info@dqglobal.com
support@dqglobal.com
accounts@dqglobal.com