

Data: The Art of the Possible

How to create
value from
your different
data sources

Creating value from data is a journey. Preparation for that journey is crucial and involves identifying all the core data sets and getting them ready for analytics. Only then can the process of extracting value from them run with maximum efficiency.

23%

Only 22% of businesses closely align overall strategy with available data.

Preface

As the ancient Chinese proverb says, the hardest part of the thousand mile journey is the first step. There is no more daunting journey than a mountainous shifting landscape that grows bigger by the hour. Yet, that is an accurate summary of the task involved in managing your data and getting the fullest, most up to date and informed intelligence possible.

Having managed and analyzed data for the best part of a decade, Rosslyn Analytics has seen the best and worst of practices and absorbed the lessons, so it can help companies maximize their application of information and intelligence throughout the organization.

All organizations run on data, but their ability to successfully exploit it is dependent on many variables, such as data quality, access to information, timeliness and relevance. Though all organizations have a common heritage in their reliance on data, the way they plan, adopt and use data varies dramatically.

We believe that the old fashioned, non-scientific approach to data is akin to the dietary ignorance that impeded the growth of previous generations. The lack of understanding of the potency of data, and its ability to invigorate every organ of the organization is symptomatic of a wider malaise.

In the next sections, we will explore these themes and create a road map for the journey to invigoration. In doing so, you will be able to ensure that your organization will not become one of the 33% of Fortune 100 organizations Gartner estimates will experience an information crisis by 2017 due to their inability to effectively value, govern and trust their enterprise data.

Hugh Cox

Chief Data Officer
Rosslyn Analytics



This paper has been designed to serve as a reference guide to help you make important decisions; those where you are not sure where to find the answer in all the data your organization currently has – but isn’t fully using or exploiting.

Value of data

Employee data

+

Salary benchmarks

=

Effectively recruit and retain talent

The Value of Data

Business and technology leaders often fail to question the importance of data or even why they should implement a data management program. However, there is a gap in perception and reality of best practice and what is going on in the business today. In other words, many theories so few practical examples.

What is missing is HOW to put in place a plan of action. A successful plan only comes from knowing the value of data, as it will enable organizations to prioritize resources and investments.

This paper is a first-of-its-kind. Unlike McKinsey, we don’t estimate the theoretical value of big data in the pharmaceutical industry, for example. That won’t solve your immediate problem of reducing the cost of drug research and development, or improving your ability to mitigate supply chain risks.

This paper has been designed to serve as a reference guide to help you make important decisions; those where you are not sure where to find the answer in all the data your organization currently has – but isn’t fully using or exploiting.

This paper will also come in handy when you want to tackle a specific business problem or explore a potential market opportunity; as you’ll be able to discover new insights and solutions that arise from the marrying of different data sources together.

To help make the meaning and value of data easy to understand, and to make it personally relevant to you, we compare data to food groups. There are, after all, similarities. You sometimes need a nutritionist (or doctor!) to help understand what to eat and when in order to perform in a manner that suits your lifestyle and goals.

All organizations (whether small to medium sized businesses or global pharmaceutical giants) must be sustained and fortified by a constant intake of data. It has to be useful and in the right proportions. The intelligence each needs differs, but the requirement for a balanced diet unifies all organizations. No matter how many suppliers, products or customers they have and in what proportion, they will still need some combination of the six major data food groups: customer, employee, product, financial, spend and supply chain data.

The devil, however, is in the detail. This white paper is intended to explain the most important general concepts underpinning the Value of Data, and provide a framework by which you can plan and execute business and data strategies. This paper will provide a start point for a planned, sensible data intake and a course of invigorating exercises that will enable all companies to work off that information, keeping the enterprise lean, agile and healthy.

“““

We have millions of lines of complex data, coming in from multiple sources and Rosslyn Analytics’ RAPid platform makes it simple for us to analyze and manage, allowing data driven strategic sourcing decisions every day.

Jenny McGeough, Value Chain Excellence
Project Manager, The Weir Group PLC



Problem Definition

In the rush to analyze all the information at hand, many organizations go boldly, but blindly, into a blizzard of data and soon become lost. They need to get their bearings before they begin. The founding principles of a good data strategy revolve around:

- 1) Obtaining data-business alignment;
- 2) Understanding the alchemy of data: and,
- 3) Improving data quality.

Let’s explore these three areas in greater detail.

Value of data

Product data

+

Commodity prices

=

Improve profit margins by leveraging fluctuations

1. Data Alignment

Data alignment is a tragically overlooked but vitally important key to wellbeing. It’s vital, and it should be the first step in any analytical effort because poor data-business alignment leads to poor decisions – not to mention costly data and technology investments; this can happen when a company puts too much weight on one entity without looking at the interdependence of all departments of an organization.

It is no good if the senior vice president of a large manufacturer spends millions of dollars to create a lean supply chain operation if that leads to underfunding in other areas such as, say, sales. If customer revenue falls, then that impoverished department will be asked to make even further savings on the supply chain, because there will be no money to re-invest in the business. The problem being, of course, that they have already produced the leanest possible infrastructure, which means that any more cuts will start hitting the bone.

44%

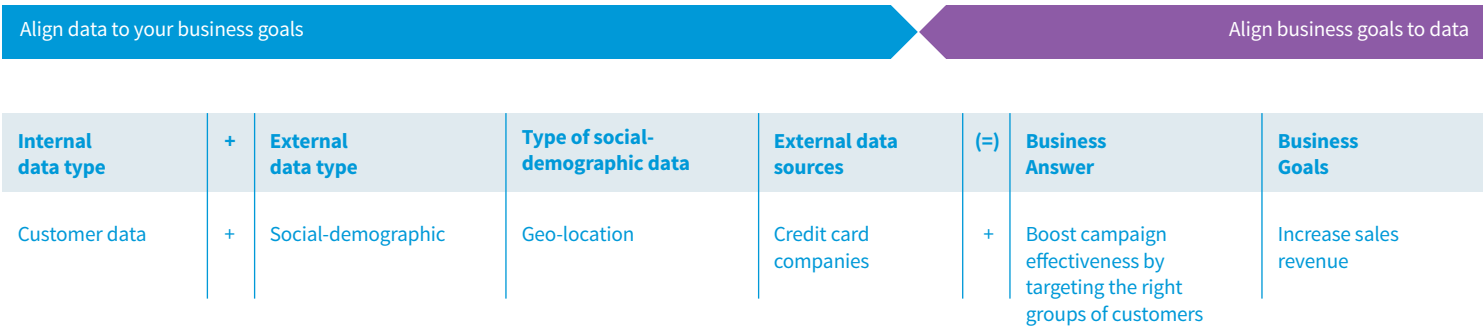
see data as a strategic asset

This exemplifies how company data strategy can go off course, as goals are hastily set without understanding and creating the alignment of the business to information. This guidance can only come from the understanding and management of data with desired business outcomes.

The realignment of organizations around data is difficult because it requires significant organizational change. It calls for a new focus, from the top down, and discipline from the bottom up.

As a starting point the enterprise leader should assess the organization’s goals (the use case of data). The next step is to determining what type of data they believe is required to make those decisions. This also works the other way around: you may have a specific type of data which will help determine the correct business goal. The key message is aligning both of these points – data and business goals.

Diagram 1



Once the value of data is established, it often comes as a shock to discover that copious funds have been wasted on unnecessary business intelligence or analytical projects. Meanwhile, other areas of the business will have been kept in the dark through under investment in data.

According to Forrester Research, 90% of the data sitting in most organizations is not used primarily because it is so difficult for people to access, they fall at the first hurdle.

So a large percentage of problems persist and go untackled, and a number of opportunities go begging. However, once the data is accessible, you can improve its quality and your organization will benefit from better, more timely, decision-making thus trust and value your data more.

Value of data

Customer data

+

Customer behavior

=

Reduce marketing spend on low revenue making customers

2. The Alchemy of Data

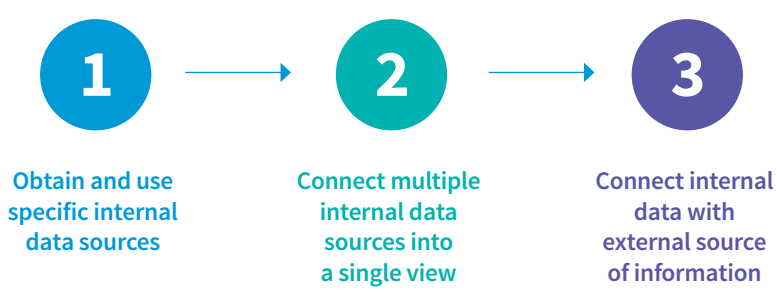
Once you know what you want to achieve in terms of business objectives, you will be in a better position to understand the type of data you need to support your decisions.

All types of information becomes much more powerful when contextualized. Data sets, when cross-referenced, become even more so. This multiplication of value is created due to a certain alchemy that exists between different data sets. The more you mix together, the better the outcomes – increase in profitability, business efficiency and internal alignment.

41%

say data is from too many different sources.

Rosslyn Analytics believes every organization should follow a three-phased approach to data discovery and analysis:



It is not uncommon to see organizations run expensive, year-long big data projects that incorporate phase three before they've mastered one or both of the first two phases.

In the long-term, this approach is unsustainable because long-term business performance will be impeded and reveal which organizations have not focused on exploiting the value of their existing data. This leads to a situation where business value goes untapped and organizations are missing opportunities.

The question is where efforts should be focused most profitably. Fortunately, we have provided use cases of data for every major department with practical examples of:

Value of data

Product data
+
Competitive intelligence
=
Secure first mover status with new offerings

- When to apply data to solve business problems
- How to get the most out of existing datasets within your organization
- How to augment your decision-making with contextual information from external sources

Below, in each data section, you are given an overview of how you can exploit the value of core datasets, at each phase of the journey, so you can maximize your efforts and investments.

3. Data Quality

For obvious reasons, bad data taints the thought processes of any organization and leads to inefficient – and sometimes disastrous - decision making. No matter how wonderful your visualization tools and your data mining platforms – ‘garbage in’ still leads to ‘garbage out’.

It’s also costly! According to Experian, 75% of organizations waste an average of 14% of revenue due to poor data quality.

The techniques many organizations currently use for refining the quality of data (such as removing bad records, deleting duplicates and incomplete entries) are not enough.

However, more importantly, it’s a reflection of how organizations view the value of data and where they are using data. The more that data gets used in decision-making, the more perceived value employees get out of it, and, as a result people are more concerned about keeping it in shape.

Value of data

Customer data

+

Customer lifestyle

=

Reduce customer churn by creating customer profiles



New World Order:

Take a New Approach to Exploiting Data

In order to stay healthy, an organization needs a balanced diet of information on customers, employees, suppliers, products, finance and spending.

Too much of one thing and too little of another can lead to bloating in some circumstances, circulation problems, light headedness and even hemorrhaging of cash and resources.

Six

We believe there are six critical data food groups that are essential to maintaining a healthy corporate body.

When too much sales information is absorbed, without a counterbalance of spending data to soak up the excesses, a sales director can become giddy and prone to rash judgment. Under these circumstances, anyone over indulging like this should be prevented from driving a car, making forecasts or operating any of the heavy levers of power in a modern mobile enterprise.

We believe there are six critical data food groups that are essential to maintaining a healthy corporate body. This section will discuss how they work, why and in what proportions they should be taken. It will examine why some data rapidly perishes, while others have an almost timeless sell by date. We will discuss how you can marry data to bring out its full flavor, and warn against mixing data types that are incompatible.

Below you will find practical examples of data preparation, sharing and consumption which have benefitted users and created a sense of wellbeing and health. These will be tempered with some cautionary tales of data abuse, misuse and malnutrition, as a warning of the perils of taking data for granted.

First, we should explain the form and function of the six essential data food groups that all breeds of organizations run on:

Six Datasets Critical to Your Success



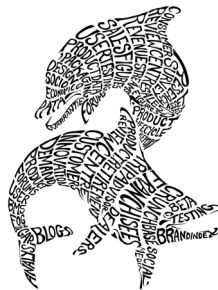
Customer data

Offers insights into existing and prospective buyers of goods and services. Customer data is primarily a top-line revenue maker.



Employee data

Provides insight into your colleagues, past, present and future. Employee data is primarily a top-line revenue maker.



Product data

Is a record of the portfolio that a company offers and how the market (customers) responds to it. Product data is primarily a top-line revenue maker.



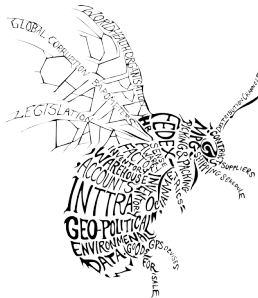
Financial data

Sheds light on revenue and other incoming transactions. Financial data is used for both creating top – and bottom-line value.



Spend data

Provides visibility on where the enterprise’s investments are being made and what its running costs are. Spend data is primarily a top-line revenue maker.



Supply chain data

Tells the story of the sourcing of the essential raw materials, goods and services required to function. Supply chain data is primarily a bottom-line revenue maker.

This is the meat of the business. Products, like protein, can be broken down into their various components and absorbed into the body of the organization. Products go hand in hand with the strength of a company.

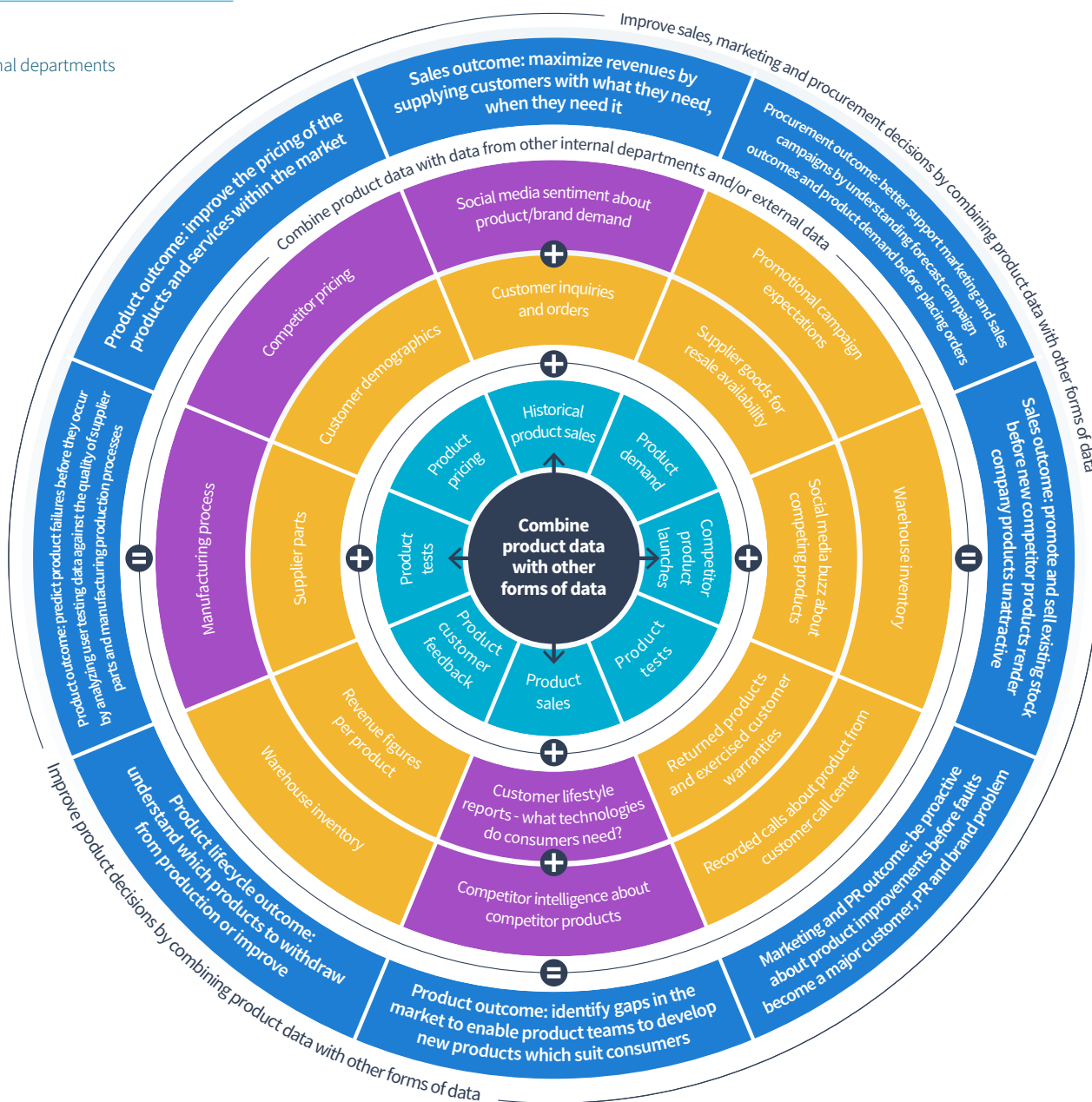
Product data can cover everything from a company's own prices to competitor prices, from customer feedback to supplier costs. To understand how product data can be blended to create a rich, succulent morsel, which both hits the spot but offers an immensely satisfying after taste, let us consider how Ford Motor Company presented its F-150 truck to an ecstatic audience of consumers.

The data analytics used to define the product helped Ford make a big difference to its revenues. The lower CO2 levels produced helped with the product plaudits from The Union of Concerned Scientists, the Natural Resources Defence Council and the Environmental Defense Fund. As a result of the goodwill generated and the impressive performance data, Ford sold over 760,000 F-150 trucks in 2013.

Lower product returns by incorporating requests from reviews

Key

- Product data
- Data from other internal departments
- External data
- Business outcome





Customer Data

This is a very complex information set which has massive hidden consequences and opportunities, much like a vitamin intake. It affects the making of deals and the opening and closing of sales, in ways which aren't entirely understood by scientists.

It can have a short shelf life – because customers are organic and subject to rapid change – and if customer data is overcooked its nutritional value can be destroyed. However, if the data is fresh and used sensitively, it can be massively beneficial.

Consider the case of a high street retailer that used big data analysis to discover something fresh and totally unexpected about its clients. The retailer delved into its information on brand awareness, loyalty, demographics and many of the other fields of customer data. By cross referencing them it discovered an unusual taste. The data revealed that the main buyers for its bone strengthening products were not brittle-hipped pensioners but steroid-driven young body builders.

Analysis revealed these were valuable shoppers who drive profit. The bone fortifying food itself was not a particularly high value product (it was aimed at a demographic that isn't particularly rich) but it turned out this commodity was attracting some valuable customers. So logically, it was worth pushing as it raised the frequency of these valuable customers and attracted high-value shoppers.

The lesson of this big data exercise was that the real profitability of products is deceptive. Taking one value on its own is misleading and sometimes other elements can combine to bring out more. In this case, only analysis revealed the true value. Though the margin on a banana might be low, if it gets the right people into the body building shops, it's a marketing tool as well as a unit in the product portfolio.

Analysis of customers also showed that frequency of buying doesn't correspond with profitability. However, it also shows that loyal customers shop more often and spend 30 per cent more per transaction. Those who buy the store magazine spend 50 per cent more than those who don't buy it. There are many actions and reactions at play when the chemistry of customer data is examined closely.

Value of data

Customer data

+

Customer online conversations

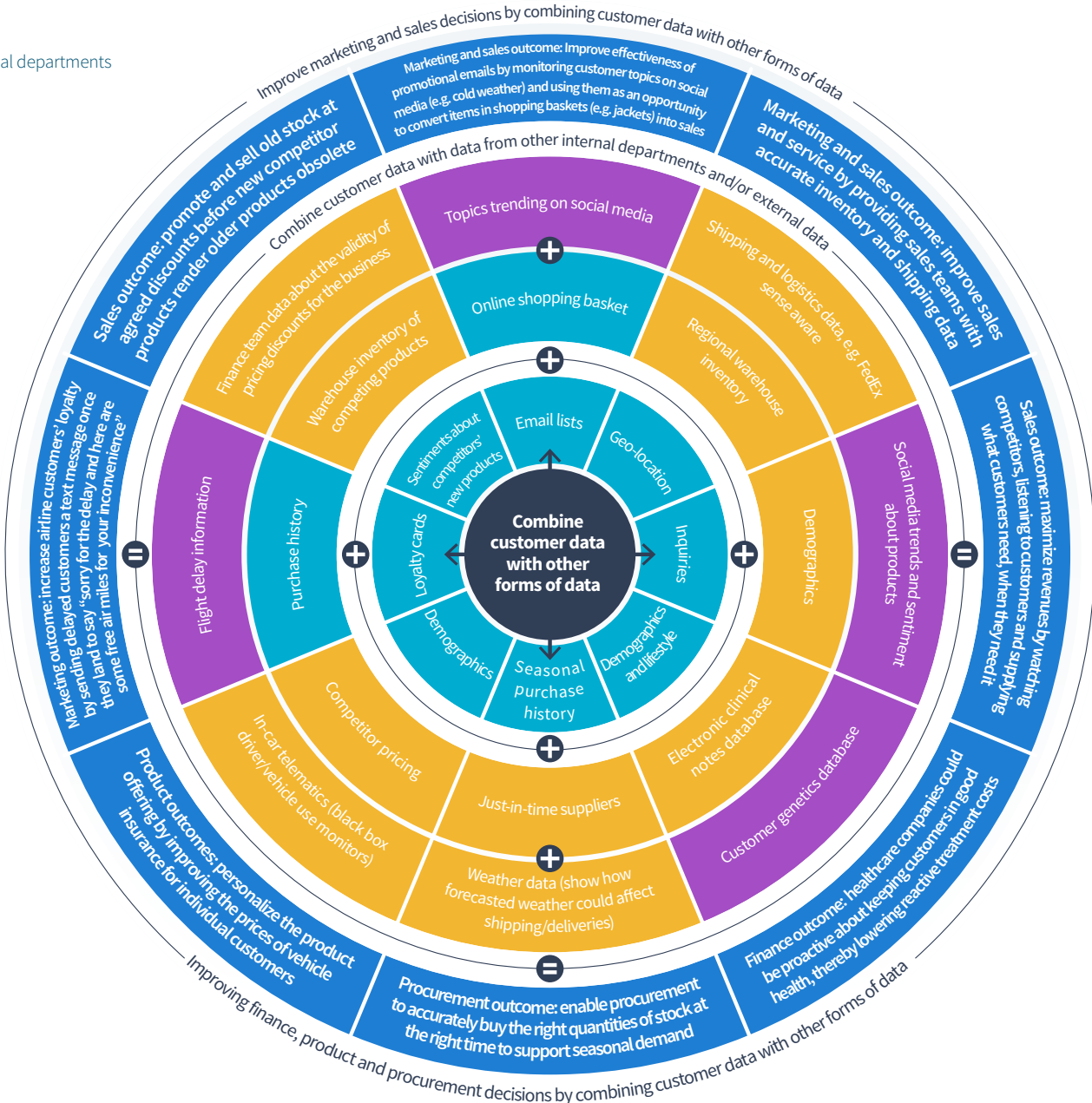
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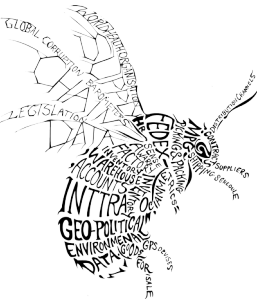
Lower reputational risk by identifying disgruntled customers



Creating value from customer data

- Key**
- Customer data
 - Data from other internal departments
 - External data
 - Business outcome





Supply Chain Data

Just as the human body cannot produce all its own nutrients and needs a staple intake of minerals by which to manufacture its tissues, so does the corporation need regular supplies.

Supplier data helps an enterprise to regulate its intake. It's important that the company knows exactly where to source its supplies, how reliable the source happens to be at any moment (this is subject to constant change and risk) and whether there are alternative pastures that need to be explored.

The supply chain is a particularly perilous territory. In certain industries, such as retail, the fine-tuning of the supply chain makes the difference between survival and death. If a CIO can shave half a percentage point off the supply chain costs of one of Britain's big four supermarkets, then he or she would achieve legendary status, as the potential savings would run into the millions. It is an incredibly difficult task, however, as the supply chains for companies like Tesco, Sainsbury's and ASDA are notoriously tight and the managers already run incredibly lean and agile operations.

Supplier data doesn't just have to be about logistics. It can cover everything from political to geological data, from world stock markets to commodity prices. No single piece of supplier data can single handedly change the way the body works but, in combination it can catalyze important reactions that energize the enterprise and restore the profitability of the corporate body.

A good balanced diet of supplier data is increasingly difficult to achieve in today's busy corporate landscape. A recent Accenture survey of 1,000 senior executives from global companies found that 97% of them understood the value of big data in the supply chain, but only 17% had an idea of how to implement it – even in a single supply chain function.

Examples might help improve understanding. The big four UK supermarkets use big data analytics to investigate losses from their supply chain. Much of the produce travelling is perishable and delays in the movement of fresh fruit and meat causes companies to throw billions worth of food away every year.

In the vast warehouses of the distribution chain, as goods make a pan European journey from producer to processor to distributor, it is easy for pallets to get damaged or misplaced temporarily. Analysis of information gathered by RFI (radio frequency investigation) tags on each pallet of goods and sensors placed at each stage of the supply chain has enabled Tesco to gather masses of data on the traffic flows of products as they are transported across its global network.

This knowledge – about accident black spots, black holes into which goods go missing and time consuming bottlenecks – has allowed Tesco to save millions by ironing out these discrepancies.

Value of data

Supply chain data

+

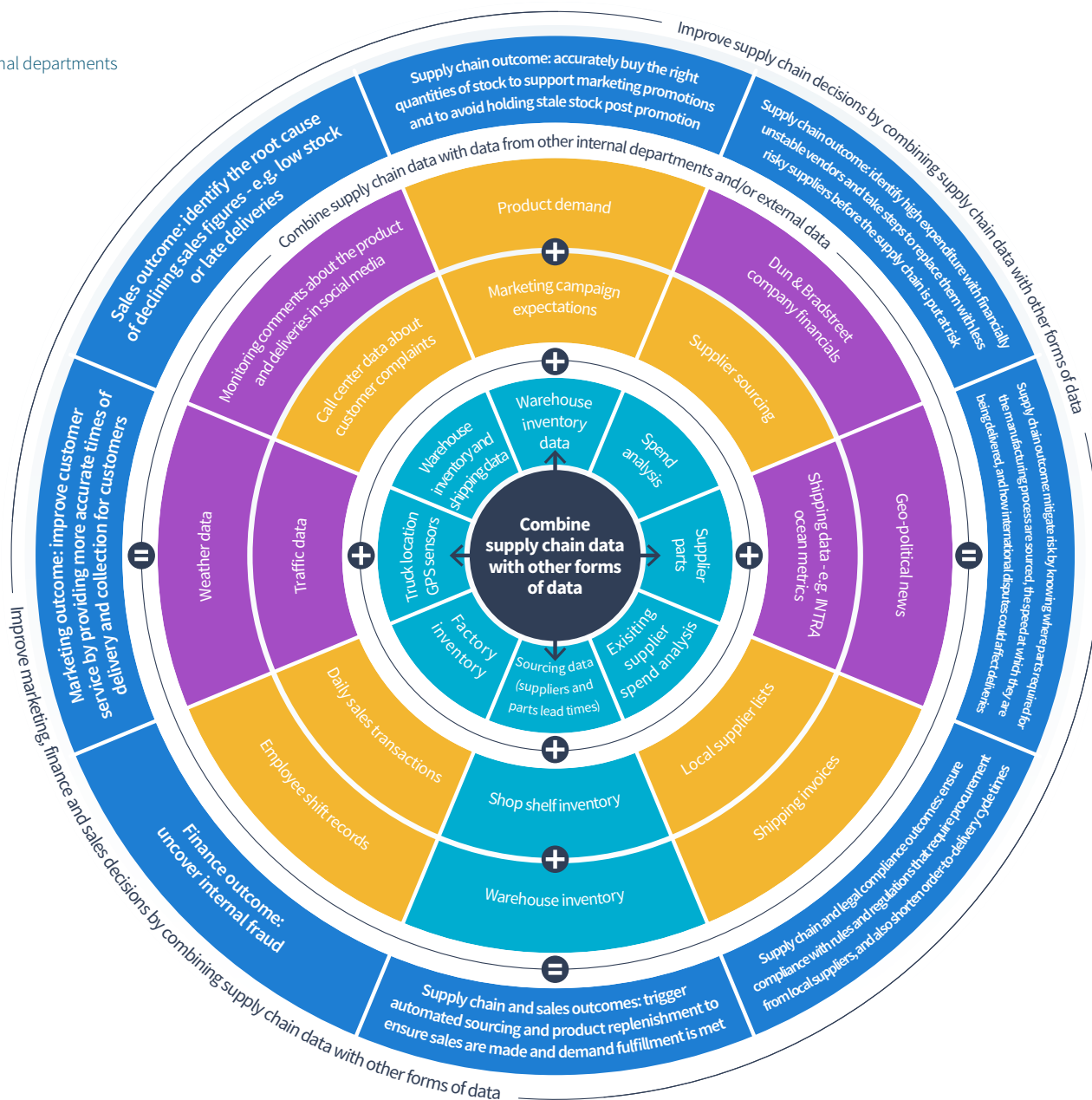
Geo-political events

=

Prevent supply chain disruptions

Creating value from supply chain data

- Supply chain data
- Data from other internal systems
- External data
- Business outcome



Financial information is the carbohydrate of the data food groups. It is finance that provides the energies – such as the motivation for staff to go to work in the morning, for customers to buy products, for companies to take the risk of creating products for trade – that power every form of transaction in a commercial enterprise.

Many organizations are supplementing their big data analysis of their petabyte silos of information with technology that intercepts data streams as they move across the company network. Companies such as Storm and ElasticSearch provide tools that tap into electronic trading events as they happen and create an instant analysis. This allows companies to make timely interventions if a downturn in trading circumstances is identified. Companies that cannot process information efficiently exhibit a form of data diabetes that needs to be addressed.

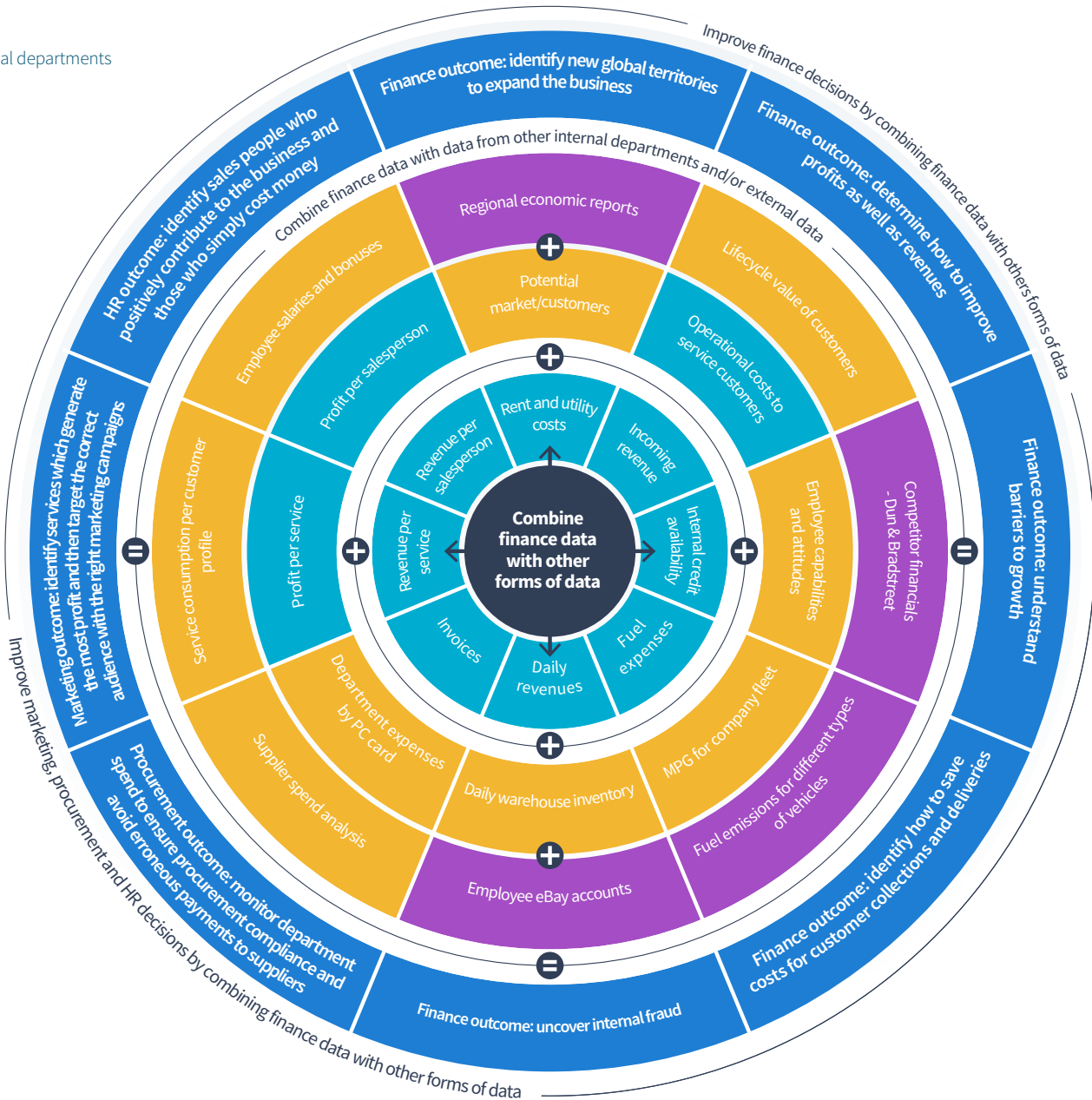
Statistical analysis of upstream and downstream process parameters and their impact on yield, their influence on the time to inoculate cells and the conductivity measures associated with certain chromatography steps, yielded enough clues about the potential for improvement for one manufacturer to save \$10 million a year. That ten million dollar breakthrough, as a result of big data science, was the saving on the manufacturing of just one of its products.

www.rosslynanalytics.com



Creating value from finance data

- Key**
- Finance data
 - Data from other internal departments
 - External data
 - Business outcome





Employee Data

If departments are the organs of a corporation, then employees are the lifeblood equivalent. Some are red cells, with their capacity to oxygenize the raw materials of production and take them to a higher state of energy level.

In corporate terms, this is known as adding value. Other types of employee carry out a more regulatory function, with accountants and compliance officers and security having a role of neutralizing dangers, in the way that a white blood cell is devoted to engulfing anti bodies that make it into the environment.

Employee information as a food group has a dual role then. It can help both to oxygenize those areas that need life breathed in to them, and neutralize others that need to be stifled. Which is why employee information covers everything from selling to social media.

Banks now track employee data and combine the various strands of information to get a flavor of the atmosphere on their trading floors. This helps them stay within the right side of the regulators.

For example, some banks monitor their traders' performance against the number of times they use internal communications systems.

They want to identify whether traders are covertly contacting clients and illegally profiting from doing so. Banks also monitor mobile phone use and use data to log the number of times traders take a break to smoke outside. They do this to identify suspicions patterns that hint at insider trading.

Banks must use big data for staff surveillance because the penalties for insider trading are huge. The scope of surveillance needs to be tempered with the potential damage this does to employee relations. The legal issues are another concern.

However, employee data analytics aren't just based around punitive examples. Employee motivation and subsequently retention is another important area that can be improved by analysis of the records. Tracking, analyzing and sharing employee performance metrics can give performance data to employers and help employees get on, by pointing out what they're doing right. Helping them to focus their attention on the most useful actions is very motivating and maintains employee loyalty.

Value of data

Employee data

+

Social media network

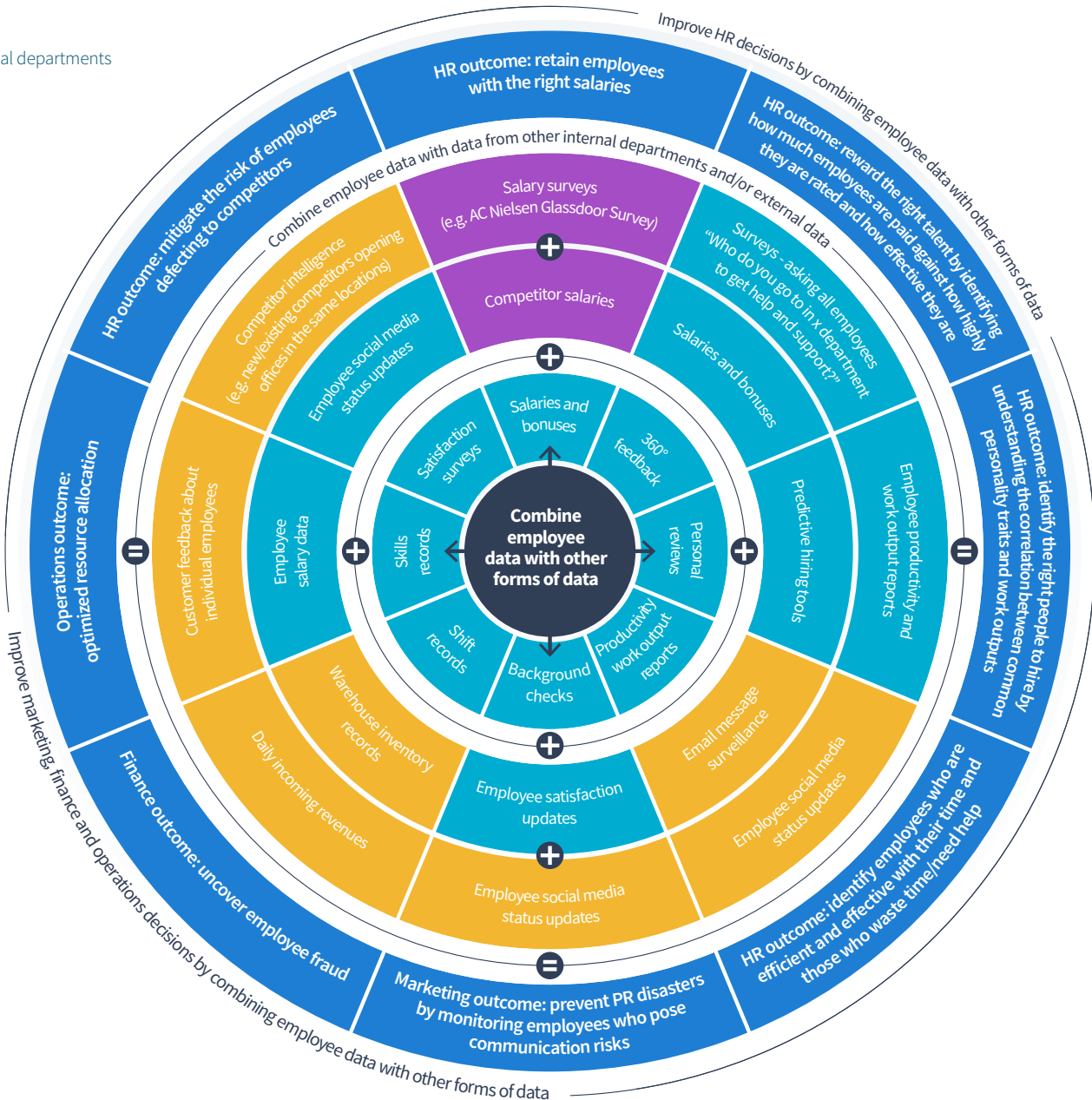
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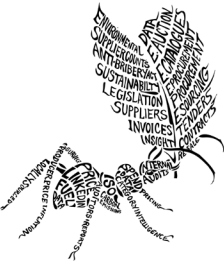
Cost effectively attract new employees and customers



Creating value from employee data

- Key**
- Employee / HR data
 - Data from other internal departments
 - External data
 - Business outcome





To learn more about this type of data, read

How to Obtain a Return on Your Spend Visibility: A User Guide for Finance and Procurement Professionals.

Value of data

Spend data
+
Supplier product
=
Expand revenue opportunities through new channels

Spend Data

Spending, like fat in the human diet, is an essential ingredient of corporate life. However, too much of it is very dangerous and can lead to a rather unattractive bottom line, which will put off investors and horrify auditors.

Spend data is often used by procurement to assess what has been bought, with whom and at what price. Yet, spend data, by connecting it with other sources of information can transform an entire organization; not just delivering bottom-line value such as improving profit margins, the same data can help inform decisions focused on top-line goals such as increase revenue.

Here are five real-world examples of the benefits of spend data:

Contract compliance
You have contracted with suppliers to provide goods and services. However, do you know when the supplier goes off-contract and deliver something that doesn't meet your specifications? Spend analytics, integrated with contract data, will inform you when items have been placed on invoices that go against your supplier agreements.

Cash flow
Lack of spend visibility negatively impacts company profits because you can't manage cash that you don't see. Spend analytics can help you improve cash flow by better understanding the cost of paying suppliers early. Further analysis such as high purchase order volumes under \$100 could reveal an inefficient accounts payable process that requires your immediate attention.

Tail-end spend exposure
The quickest savings opportunities can be had by getting a grip on the biggest spend with your biggest suppliers. Yet, the largest savings are often found in the tail – the 20% of total purchasing spent with your smaller suppliers. The challenge for many organizations is first obtaining visibility of the fragmented tail-end spend followed by effectively managing it to conclusion.

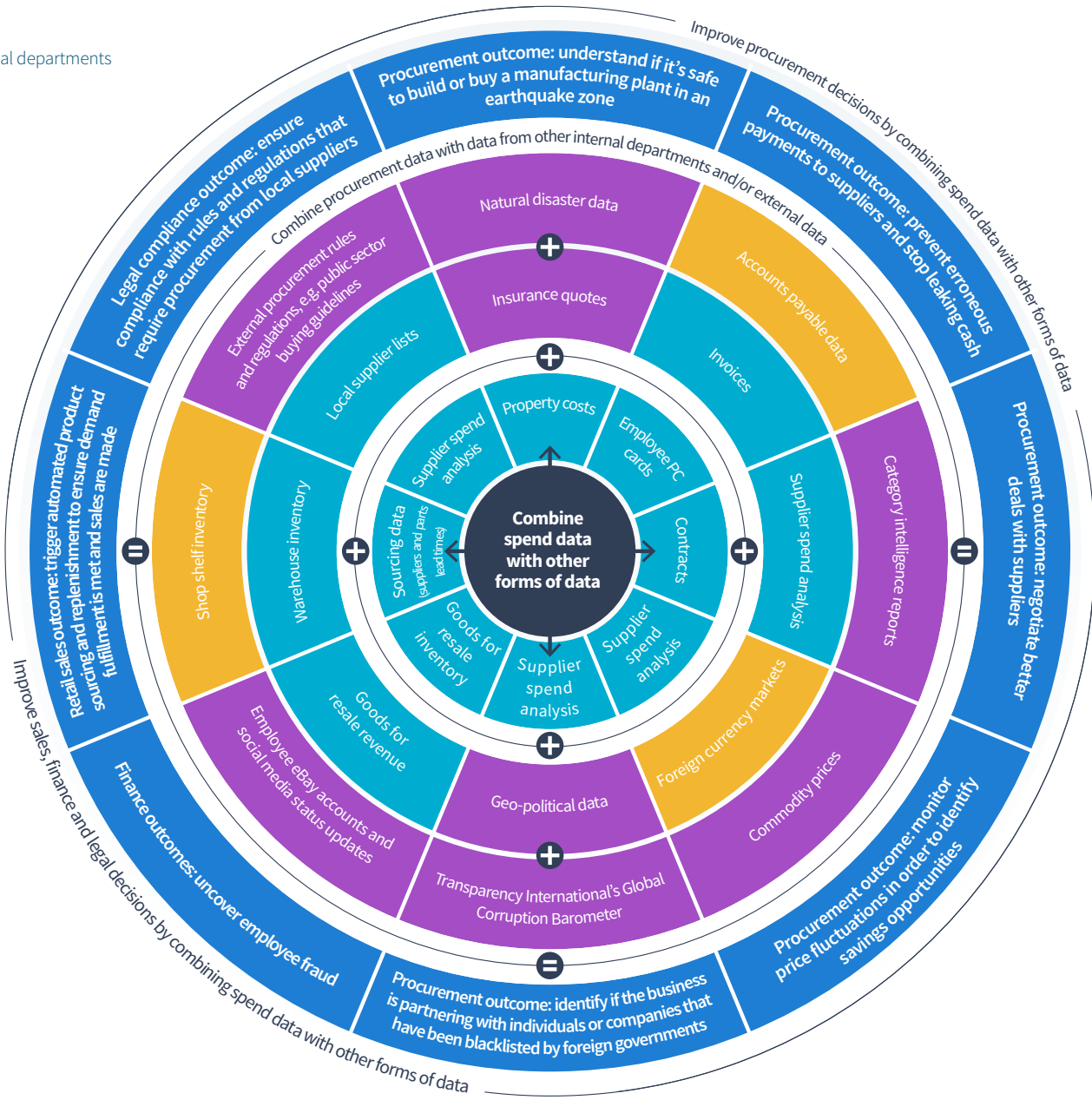
Overpayments
Unplanned overpayments are inevitable but if it happens more frequently it's a sign of something more severe such as potential fraud. It's therefore vital that you identify erroneous transactions so you can recover these overpayments as quickly as possible. Spend analytics will also help you to prevent duplicate payments, preventing your organization from leaking cash that could be used elsewhere.

Supplier diversity
Establishing supply chain diversity isn't just good business sense, it's often a government requirement. The challenge for most organizations is not knowing the types of suppliers; and this lack of visibility can often limit business growth. Spend analytics will tell you how many of your suppliers are minority and women-owned businesses and through this knowledge you'll be able to establish a more robust sourcing strategy that will create significant value for your organization.



Creating value from spend data

- Key**
- Spend data
 - Data from other internal departments
 - External data
 - Business outcome





You need to have the right leadership, data strategy, technologies and business processes to prioritize and turn complex data into meaningfully information.

Value of data

Employee data



Employment predictions



Forecast the cost of running company in competitive market

Conclusion

Organizations run on data. When tapped and refined into information, you are able to do exciting and innovative things.

In a world where organizations are inundated with data from so many sources found inside and outside the office, the question is where to focus efforts to deliver business value.

Rosslyn Analytics believe too many business and IT leaders are focused on big data projects, neglecting the large amounts of data already residing but untapped in your organization. This should be the priority. It's why, for the first time, we have mapped out the value of data so you can deliver business value.

This unique research showcases a sampling of the insights that you can create by accessing, connecting and sharing data across your organization. But it is not going to happen overnight. It is a journey similar to that an athlete faces, to get into shape to win a race.

You need to have the right leadership, data strategy, technologies and business processes to prioritize and turn complex data into meaningful information AND then to ensure it's actually used to support decision-making.

In the next section, we will discuss how big data is used practically, by executives in the following roles: procurement, supply chain, finance, product manager, marketing and human resources.

Addendum 1.0 – Roles/Department

Value of data

Customer data

+

Sales revenue

=

Determine total cost of customer acquisition

Five Ways Better Data Leads to Better Financial Decisions

A global data center service provider wants to move into Turkey, because reports from Gartner and Unisonius indicate that this region has the fastest growing economy of the region where East meets West. Financial data (on the growth in the banking sector here) suggests this could become an international hub of global trade.

As part of its due diligence, the service provider will consult regional economic data (from say, the World Bank) and data evaluations on how easy it is to do business in Turkey. (Even business culture can be quantified.) The next set of investigations will examine potential markets and customers, with data on previous patterns of spending.

Finally, more detailed data sources, which are co-dependent (such as revenue per service, cost per salesperson, and margins per service) will be examined, to see if the Turkish data center market is worth entering.

Finance

Data is invaluable to finance – get it right and revenue soars. Get it wrong... In 2014, Walgreens lost its CFO because he reportedly misforecast that the drugstore chain’s pharmacy division would show \$8.5 billion in sales for fiscal-year 2016. Three months later, the executive reduced the forecast by \$1.1 billion. These mistakes are rare but they do happen. Armed with the right data, better and timelier decisions are possible. Finance can and should use data in many ways, helping colleagues across the entire organization to look into the past, present and future. This will improve budgeting and forecasting capabilities and risk management capabilities.

Value of data

Spend data

+

Employee names

=

Mitigate supplier-
employee collusion
and fraud

Addendum 1.0 – Roles/Department

Procurement

In the age of austerity, the cost of running public services is a political hot potato. Whether savings are achievable without hurting front line services is a moot point. Data analytics can only help shed light on this contentious area.

Analysis of the costs of procurement would work on five levels. Firstly, the number of categories of products and services purchased would need to be analyzed, to provide greater clarity when making purchasing decisions. Clarity reduces errors. It's often the case, in the public sector, that high staff turnover and long lead times for invoice payments lead to situations where suppliers are unwittingly paid several times for the same work. Analytical tools can help eliminate these mistakes. More detailed data on performance can lead to tighter management of the running of contracts and enforce contract compliance, which saves the authority considerably from the risks of expensive lawsuits. A cross fertilization of data sources can indicate areas where services could be shared, creating greater economies.

Shedding more light on spending, and greater clarity exposes any malpractices because embezzlers have less option to hide. Using these techniques the National Procurement Service of Wales could save an estimated £202 million.

Supply Chain

The retail industry is under immense pressure to tighten up its supply chain. Even a one per cent saving can wipe millions off its running costs. In the UK grocery chains like Aldi and Lidl surveyed the supply chain costs of stocking multiple brands of the same product. Then they compared the costs of using one brand per product, the improvement in bargaining power by giving all their business to one supplier. Analysis showed the costs of managing the supply chain dropped dramatically when the number of suppliers was drastically cut back.

The retailers then calculated how much of these cost savings they could pass on to the consumer. As a result of this supply chain analysis, discounting retailers Aldi and Lidl have made significant inroads into a market previously dominated by the big four incumbents (Sainsbury's, ASDA, Tesco and Waitrose).

Sales

There are thousands of important stories buried among the silos of sales data. The relationships between them are not always obvious or apparently logical. For example, the annual battle of wits between the retailer and the customer at Christmas means that purchasing patterns are changing. Sales data shows that many canny customers are waiting until after Christmas to do the bulk of their shopping. Analysis of social media and shopping web sites (such as MoneySavingexpert.com) shows that shoppers are being urged to plan their purchases tactically. There is a significant demographic however, influenced by shopping deadlines, such as Black Friday, according to analysis. This data enabled many white goods retailers to have a highly successful pre-Christmas campaign.

Value of data

Product data

+

Industry news

=

Identify future skills gaps and prepare for a battle for talent

Addendum 1.0 – Roles/Department

Marketing

Most human beings display consistent patterns, according to shopping psychologists, and their analysis of customer data bears this out. History repeats itself, so historical patterns of customer behavior are a useful guideline to predicting future behavior. Purchase histories, when cross referenced to reactions to competitor pricing, for example, could give retailers insight into how to protect their markets. Tesco and Waitrose, for example, analyze their customer data (as well as feedback from Twitter and Facebook) in a bid to win back the customers they are losing to Aldi and Lidl. Customer perception of offers (such as Buy one Get one free) is changing, and the retailers will be analyzing how customers react to these initiatives.

Product Development

The amount of money a manufacturer invests in product development needs to be weighed against the possible revenue, but this in turn is affected by several other factors that are in a constant state of flux. In the green fuels market, one company is facing a dilemma over how much money it should devote to developing a biological, environmentally friendly form of aviation fuel.

The potential is huge but data will be analyzed to ask: which other companies are known to be involved in this? How close are they to launching? What is the price tipping point at which some airlines will go for a biofuel? How much more expensive would it be than normal aviation fuel? What sort of tax and carbon reduction savings would be available? Should the green fuel inventor ramp up production itself, or do the figures suggest it would be more cost effective and timely to sell its intellectual property (the secret of the manufacturing process) so that bigger companies, with a ready-made infrastructure, can sell the product under license.

These are all examples of product development data that analytics will shed light on.

Human Resources

Human resources are one of the hardest variables to manage, and yet they make the biggest difference to outcomes. Each human brain is infinitely more sophisticated than the most advanced computer that the combined efforts of IBM and Google could produce. But the human psyche is far more volatile than a machine and more prone to downtime and defection. The studies of data related to motivation (such as salary data, competitor salaries and salary surveys) all give companies insight into employee wellbeing.

However, money is not the full story. Analysis of productivity and its relationship to satisfaction data is illuminating. The other motivations for work and factors for enjoyment can be measured by, say, social media analysis and data from companies that track social trends. Though the ‘soft skills’ and psychological factors that affect human output are difficult to quantify, there is data available to make educated guesses. This data might not be definitive, but it will help HR managers and CEO to back up their ‘hunches’ and makes judgments more scientific. Human resources are difficult to manage but big data analysis makes for better decision making.

Addendum 2.0

Your internal data	+	Type of external data	=	Business Answer
Customer	+	Income of customers	=	Better market to customers based on socio-economic information
	+	Name of customers	=	Increase number of customers and prospects
	+	Age	=	Know how much a customer spends and how much disposable income they have
	+	Gender	=	Improve retention with better knowledge of customers profiles or personas
	+	Occupancy	=	Reduce customer churn with better knowledge of customers profiles or personas
	+	Location	=	Boost campaign effectiveness by targeting the right groups of people by geography
	+	Family / dependents	=	Get a faster return on investment with more segmented / targeted marketing
	+	Lifecycle phase	=	Increase number of high value customers by knowing who the high value customers are
	+	Purchasing habits	=	Increase average revenue per customer by understanding buyer's online behaviour
Product	+	Competitors' prices	=	Respond faster to a competitor's aggressive pricing strategy
	+	Industry prices	=	Benchmark your pricing against competitors
	+	Pricing by location	=	Increase sales by localizing pricing based on market insight
	+	Pricing by demographics	=	Accelerate customer acquisition by selecting appropriate regional partners
	+	Testing	=	Improve operational efficiencies by incorporating emerging QA technologies and processes
	+	Supplier costs	=	Reduce cost of developing products by expanding supplier base with innovative vendors
	+	Customer thoughts about pricing	=	Predict consumer purchasing plans by monitoring lifestyles trends
	+	Commodities pricing	=	Improve profit margins by leveraging fluctuations in commodity prices

Value of data

Supply chain data

+

Government black lists

=

Prevent fines by not trading with sanctioned entities

Value of data

Product data

+

Competitor price lists

=

Respond faster to a competitor's aggressive sales strategy

About Rosslyn Analytics

Rosslyn Analytics (AIM: RDT), the leading global data technology company, helps organizations create new business value from previously inaccessible data. We have developed exciting award-winning technologies designed specifically for business users to easily access and turn complex data into meaningful information via our RAPid Data Cloud Platform. No other platform, on premise or in the cloud, is such a game-changer, with a data technology stack that includes human-driven machine learning and NoSQL technologies such as Hadoop, MongoDB and ElasticSearch.

For more information including a demo, visit
www.rosslynanalytics.com or [@RosslynBI](https://twitter.com/RosslynBI).

Value of data

Customer data

+

Competitor customer wins

=

Run an efficient, targeted sales program



Hugh Cox
Founder, Chief Data Officer

Hugh co-founded Rosslyn Analytics Ltd with Charlie Clark. Hugh is a recognized expert in helping public and private sector organizations tackle business issues through technologies including cloud computing, data management and analytics.

Hugh has authored and spoken extensively on the subject of data analysis with particular focus on fraud prevention and detection, through the deployment of cloud-based analytics platforms.

Prior to establishing Rosslyn Analytics, Hugh held senior positions with COO Investments (EMEA) and Citigroup Private Bank. He also worked for Perot Systems, JP Morgan and Logica.

After leaving the British Army, Hugh took a BSc in Computer Science and an MBA from City University Business School, London, UK.



Lance Mercereau
Chief Marketing Officer

Lance lives and breathes technology, always thinking of new and innovative ways of exploiting the latest such as cloud computing for the benefit of his customers. Lance started his career - almost 20 years ago - at the height of the San Francisco dot.com era, advising start-ups on business strategy, customer acquisition, alliance ecosystems, corporate affairs and brand management.

Known for his aggressive “West Coast Offense” approach to marketing, he subsequently moved to and worked in the United Kingdom and the emerging markets of Central and Eastern Europe where he successfully established in-house marketing organizations and launched products and services for award-winning companies such as Agilent, Dell, IBM, Intel and SAP, targeting enterprises, small and medium sized businesses (SMBs) and consumers. After a year away as global head of marketing at a technology-focused business consultancy headquartered in London, Lance rejoined Rosslyn Analytics as its Chief Marketing Officer.