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White paper

Calculating the ROI of BI

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Business Intelligence (BI) solutions enable organisations to find and gain competitive advantage.

That said, the tools can represent a significant investment – not just in money, but also in the time needed to implement and train employees in their use, and the commitment required to manage data-driven initiatives and projects.

So, it is all worthwhile?

US-based Nucleus Research calculated in 2014 that every dollar an organisation spent on analytics returned an impressive $13.01, an increase from $10.66 three years before.[i]

In March 2017 the same firm reported that data management solutions returned $14.44 for every dollar spent, and noted that the return rate "is considerably higher than that of most other core enterprise software deployments, indicating that a well-planned data management deployment can make a massive impact on a business."[ii]

Perhaps that sounds too good to be true, so let's look at how you might evaluate the investment and the returns of your current or proposed BI solution, so that you can properly assess the Return on Investment (ROI).

Before we begin, a small word of caution: calculating the ROI for BI and analytics is complex.

"The link between BI investment and net profit is frequently indirect or even intangible," says Travis Barker, consulting partner at Stellar. "We suggest thinking of data and analytics as the enabler of business change that will lead to lower costs and/or higher revenues."

You may, for example, have a sales team assigned to customer retention. Imagine how much more effective they could be with an analytics solution that predicts which customers are most likely to be considering leaving your company. If all goes well, your staff will keep the customers, but the data-analytics system should get credit at least for "the assist".

Investment

The costs of building and implementing a BI system will include such things as:

Software

Deployment

Project management

Training

Administration

Maintenance

Allocating costs under the above headings shouldn't be too hard. The key is not to overlook or underestimate costs related to the BI project in either the building or maintenance phases.

Returns

The returns (or "benefits") of a BI solution can be more difficult to pinpoint:

- As mentioned already, data and analytics sometimes affect profit in an indirect way only.
- It can be challenging to separate the impact of BI from market influences and other factors affecting the business.
- No matter how much insight your BI solution provides, it is of no value unless it is acted upon. So if you're not using BI to drive decision making, don't bother trying to calculate the Return on Investment!

With the above three caveats noted, let's look at some of the benefits of BI and how you might gauge their value. To get the most accurate picture, you'll need a solid understanding of how employees spend their time, how profitable those activities are, and how BI improves their performance.

You can also assign values to the following benefits:

Access to data

Data about the business should be in the hands of all who need it, not just with whoever created it. This helps elicit new insights, identify opportunities and stimulate innovation.

Specifically, BI practitioner Eldad Farkash suggests thinking about the value provided by the following attributes of your BI solution.[iii]

- Speed and capability of the tool to take users from aggregate data to granular data
- Scope of the data that's being extracted
- How fast people get access to the data they need
- How granular the data is

Centralisation of data – a single version of the truth (SVOT)

Your BI solution may replace several existing legacy systems and databases, reducing your IT costs.

Data integrity

If you're still relying on spreadsheets, you'll know how vulnerable they are to errors. As well, having multiple spreadsheets created by different functional areas leaves the organisation with multiple versions of "the truth", which is confusing and risky.

Time spent handling data

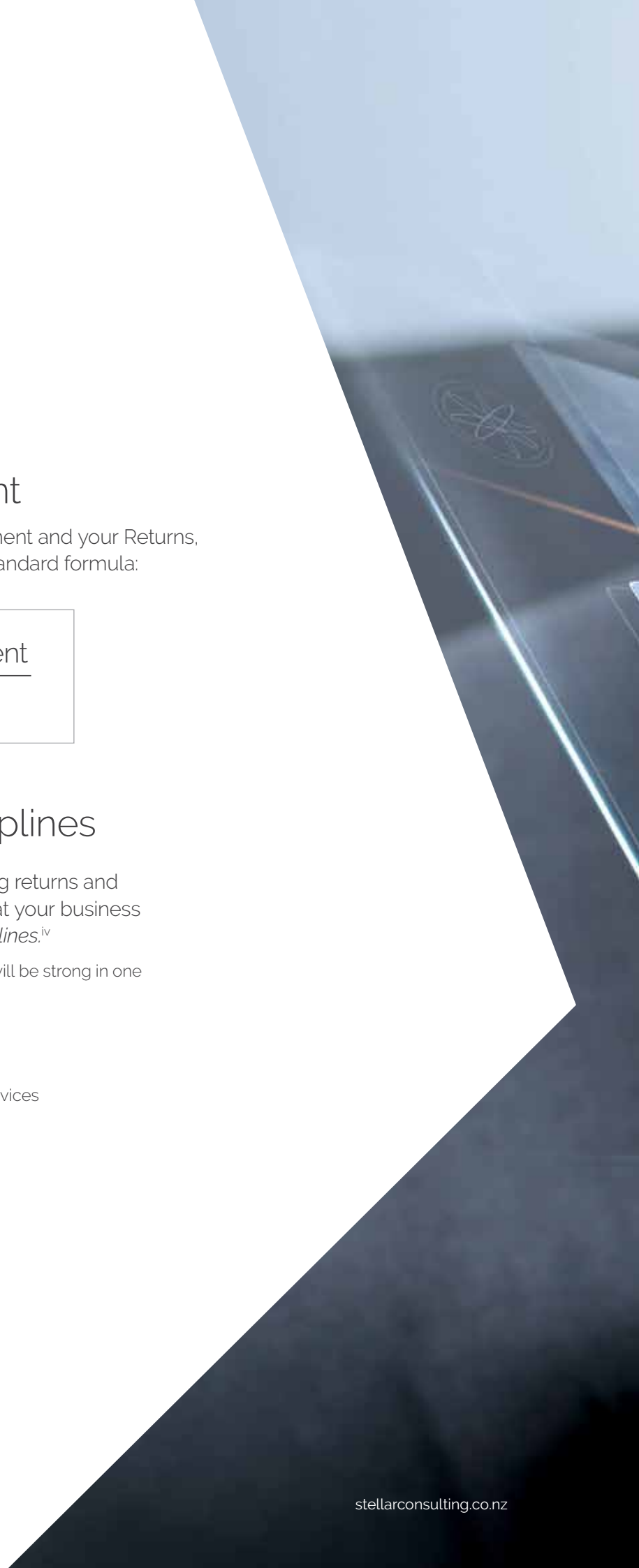
Spreadsheet manipulation is probably not the best use of your people's time – and some of them may not be very good at it!

Speed at which decisions are made

As your business grows and becomes more complex, it becomes obvious that spreadsheets don't scale. To make decisions quickly, you need data at your fingertips.

Bottom-line impact of specific decisions

You'll want to know which business decisions have been influenced by your BI systems, and the quality of those decisions – in dollars and cents. Ask yourself: "Would we have made this decision if we hadn't been guided by our data/analytics system?" and "Would we have moved at the same speed, with the same approach, if we hadn't had the confidence provided by the data?"



Return on investment

With values assigned to your Investment and your Returns, it's time to calculate ROI, using the standard formula:

$$ROI = \frac{Returns - Investment}{Investment}$$

Applying value disciplines

If you're still struggling with identifying returns and investment, it can be helpful to look at your business from the point of view of *Value Disciplines.*[iv]

Your company – assuming it's successful – will be strong in one (or possibly two) of these three disciplines:

1. Optimising business processes
2. Engaging more deeply with customers
3. Using data to create new products and services

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Nucleus Research, 2017

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1 Optimising business processes

Optimisation typically aims to reduce costs and complexity. A data and analytics solution will remove much of the labour involved in compiling data and generating reports. To quantify the benefits, we could look at how many hours each staff member spends on these activities and multiply that by their hourly wages. We would also want to consider the value of work they could be doing instead – the opportunity cost.

Aligning the BI solution with the corporate strategy (goals and objectives, along with their success criteria) enables businesses to effectively monitor progress on KPIs. Making performance data accessible to employees gives them greater understanding of their impact on the business and insights that can help raise their productivity.

New Zealand's Innovation Partnership collective, made up of several of the country's top digital business leaders, examined the impact of data-driven innovation and delivered a comprehensive report in 2015.[v]

Breaking down the impacts of innovation in the nation's largest sectors, the research estimates considerable cost reductions across the board.

Due to the volume and variety of data available to organisations, the transport/logistics and retail sectors stand to benefit the most in terms of bottom line. Gross Value Added (GVA) by data-driven innovation in the former is predicted to reach over $1.1 billion in 2020, increasing from $611 million in 2014, while the latter sees a similar jump, from $549 million to $1.046 billion over the same time period.[vi]

By contrast, New Zealand's largest sector – primary industries – reflects a limited uptake in innovation.

"There are significant potential benefits [of data-driven innovation] in the primary sector – for example people we spoke to in the dairy sector suggested that [data-driven innovation] could generate efficiency improvements on the order of 10 per cent, from a combination of cost reductions and improvements in yield."[vii]

Data analytics isn't just for fixing shortcomings, says Harvard Business Review contributor Mohanbir Sawhney, but for optimising services that are already successfully delivered.

"High-volume, low-skill tasks are ideal for automation—and, in fact, the technology already exists (think cruise control and blind-spot monitors). By contrast, low-volume tasks don't provide enough data on which to base automation, while high-sophistication tasks are not easily automated because they require strategic decision making."[viii]

Data-supported decision-making allows businesses to adapt to the shifting desires of their customers more easily.

2 Engaging more deeply with customers

In our complex and fragmented digital world, engaging with customers has become a considerable challenge. But businesses that understand their customers have the potential to connect effectively with them (at the right time with the right messaging) and at scale, using customer data.

Customer data isn't just for people inside the business either. Providing customers with accurate information about their accounts, their orders and relevant products, and doing it efficiently, helps improve customer satisfaction.

A Forbes Insights survey in 2016 questioned over 350 executives about the data-driven customer experience, with 52 per cent reporting that "a well-developed and designed enterprise data analytics effort enables us to deliver a superior customer experience."[ix]

Agility seems to be a key factor, with 62 per cent of respondents agreeing that data-supported decision-making allows businesses to adapt to the shifting desires of their customers more easily. This optimised performance has translated to a better bottom line: 47 per cent reported increased sales and revenue, and 44 per cent improved customer loyalty.

Research from McKinsey and Company shows that companies extensively invested in customer analytics technologies are outpacing their competition with ease in four key areas: profit, sales, sales growth and ROI.[x]

The figures speak for themselves: The number of companies likely to be considered above average in each area more than doubles – and in sales growth almost triples – for those heavily invested in customer analytics solutions.

McKinsey notes that unlocking the full benefits of customer analytics depends on three factors:

- Building a culture that welcomes analytics and data-driven decision making.
- Ensuring senior management is involved in the deployment and use of analytics tools.
- Committing to excellence by promoting use of analytics throughout the business.

By 2020, 80 per cent of all business processes and products from a decade earlier will have been reinvented or made obsolete thanks to digital innovation.

Gartner (2015)

3 Using data to create new products and services

The creation of new data-driven products and services is perhaps the most challenging aspect of ROI to measure, as there can be a considerable lag from R&D investment to bottom line results. That said, organisations that have successfully developed new innovations to a market-ready state are among the most disruptive success stories of the past several years.

"Enterprises can transform by exploiting business moments or by using digital capabilities to enter or create new markets, as Airbnb and Uber have done," says Jorge Lopez, vice president and distinguished analyst at Gartner.[xi]

Through smart use of data and technology, these companies have redefined their entire industry. In the case of Uber, travel and expense management provider Certify found that the startup's market share of ground transportation transactions in the United States soared to 52 per cent in the final quarter of 2016. Car-rental and taxi services fell to 33 per cent and 11 per cent, respectively. Taxis were affected most, down more than 37 percent since the first quarter of 2014.[xii]

"Many enterprises will find it easier to start by creating a vision for digital business for their particular industry," Gartner's Lopez says. "Once the enterprise has established its vision, it can more easily tackle business moments or leverage its digital capabilities in new markets."[xiii]

By releasing and testing new iterations of products frequently, taking feedback and refining, a strategy of gradual improvement can yield impressive results.

Company culture and organisational structure must be adapted to accommodate these processes. Dedicating resources towards product development can identify opportunities and empower teams to nurture and explore bold new ideas.

By 2020, 80 per cent of all business processes and products from a decade earlier will have been reinvented or made obsolete thanks to digital innovation, according to Gartner.[xiv]

Selling or licensing data is another way of generating value from it, but 50 per cent of organisations responding to an online poll by Gartner in 2015 said they were not monetising their data in any way.[xv]

[i] Nucleus Research. (2014). *Analytics pays back $13.01 for every dollar spent*. Retrieved from http://nucleusresearch.com/research/single/analytics-pays-back-13-01-for-every-dollar-spent/

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[vi] ibid, p. 23

[vii] ibid.

[viii] Sawhney, M. (2016). Putting products into services. *Harvard Business Review (Sep).* Retrieved from https://hbr.org/2016/09/putting-products-into-services

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[x] Fiedler, L., Großmaß, T., Roth, M., & Vetvik, O. (2016). *Why customer analytics matter.* McKinsey CMO Survey, Retrieved from http://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/why-customer-analytics-matter

[xi] Gartner. (2016). *Gartner says enterprises should create an industry vision for digital business success.* Retrieved from http://www.gartner.com/newsroom/id/3336617

[xii] Bloomberg (2017). *Uber takes majority of ground transport market for US business travellers.* Retrieved from https://www.bloomberg.com/news/articles/2017-01-26/uber-takes-majority-of-ground-transport-market-for-u-s-business-travelers

[xiii] Gartner. op. cit.

[xiv] Gartner, (2015). *Seven steps to monetising your information assets*, p. 3. Laney, D., Faria, M., Duncan, A. Retrieved from http://www.connotate.com/wp-content/uploads/2016/04/Gartner_Seven_Steps_Report.pdf

[xv] ibid.

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Stellar Consulting works with many of New Zealand's most respected organisations, helping them optimise their operations, get closer to their customers, and use data to create innovative products and services.

Our team of dedicated BI consultants – the largest in the country – has the expertise to help businesses thrive in the digital age. We'll work with you to identify opportunities and create a business intelligence strategy that will minimise your costs and maximise your returns.

We partner with the leading BI vendors, so we can advise you on the components and build the system that's just right for you and your team.

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