

RESEARCH PAPER

The Rise of Automated Analytics and the Demise of Dashboards

Why BI Dashboards are Failing to Provide the Insight They Promised

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Executive Summary

No matter how far organisations may have progressed in their transition from a majority of decisions being made by instinct and intuition to primarily using data, the one thing most businesses seem to agree on is that data-driven decision-making is key to their organisation's ability to compete in the market and meet its business goals.

95 per cent of the individuals we surveyed for this particular piece of research had some sort of enterprise BI or data analytics platform in place.

Is being data-driven enough to survive and prosper in an era when the rate of economic growth in many developed economies is slowing, and the outlook is generally one of uncertainty with a high degree of pessimism?

Some businesses have decided that the answer to this question is an emphatic “no” and are therefore choosing to become driven by insights rather than data. Insight-driven organisations better understand their customers (and those of their competitors) and try to continually improve their experience. They gain competitive advantage by building a holistic approach to BI and combining every stage from collection and preparation through to analysis, insight and action.

Analysts estimate that insight-driven businesses will be growing at anywhere between 27 and 40 per cent in the years ahead – despite the somewhat gloomy economic backdrop.¹

At the heart of the transition from data to insight is the dashboard. There has been quite the arms race in BI platform dashboard functionality with vendors falling over one another in their claims to be easier to use and more feature rich than ever before.

Computing surveyed approximately 100 business decision makers representing businesses ranging in size from fewer than 250 employees to those with many thousands, and from multiple industry sectors, in order to establish how BI dashboards are helping – or hindering – UK businesses in making the switch from being data-driven to insight-driven.

Are dashboards delivering insight when business users need it or are the dashboards the problem, as opposed to the solution?

Investing in Insight

In order to try and establish whether BI dashboards are delivering the promised returns, *Computing* asked some questions about investment in those platforms. The responses are shown in Figure 1 (*see next page*). Many enterprises have invested significantly in BI platforms and analytics tools, keen to turn increasing volumes of data from multiple sources into business insight and action, and ensure that they leverage every opportunity that capturing data has to offer. By 2020, analysts suggest that this market is likely to have doubled in size from that of 2010.²

¹ <https://www.forbes.com/sites/forrester/2016/07/29/insights-driven-business-are-stealing-your-customers/#305268706070>

² <https://www.statista.com/statistics/294653/enterprise-software-revenue-worldwide/>

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The answers given by our respondents reflected the overall trend of BI growth. A majority of respondents had invested, to at least some extent, in their BI in the last five years – 13 per cent significantly and 52 per cent by upgrading, increasing the extent of integration, etc.

Fig. 1a : Has your business invested in BI/Analytics in the last five years?

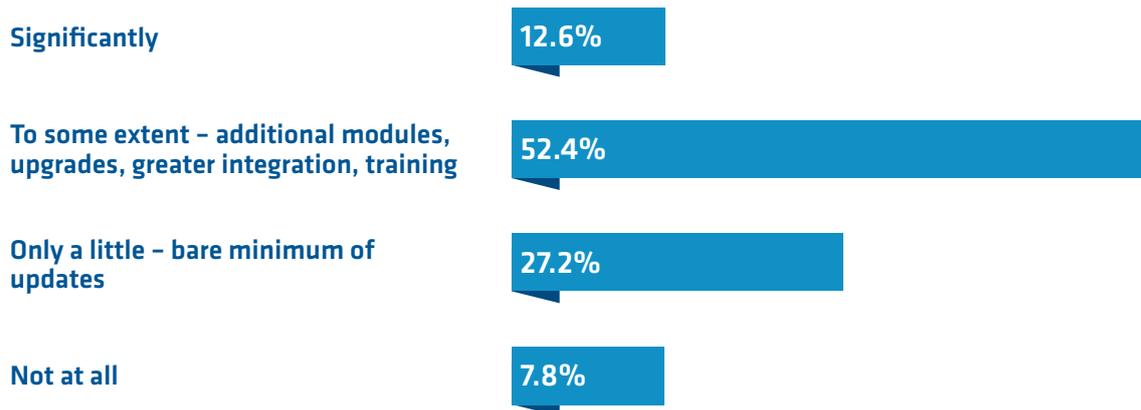
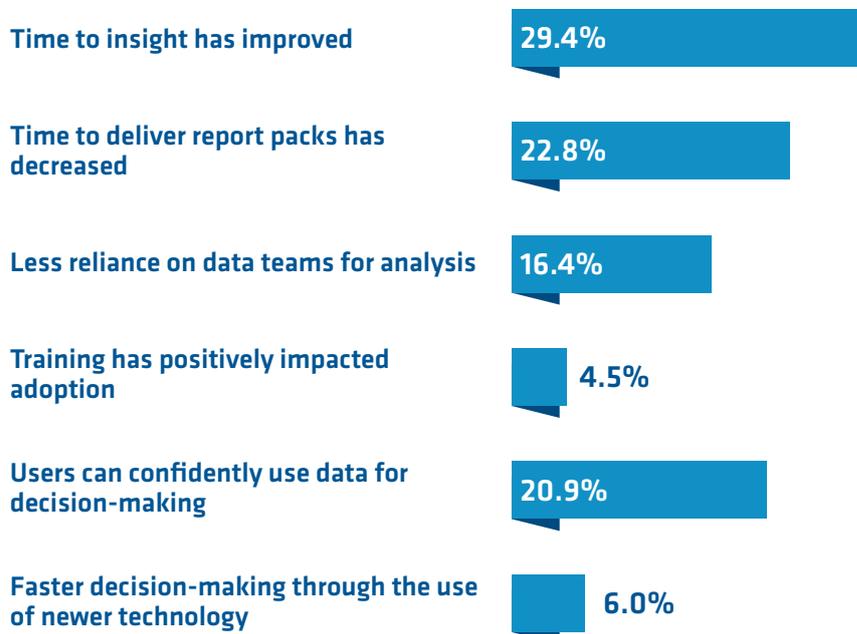


Fig. 1b : Please explain the impact of additional investment in BI/ Analytics (respondents asked to select up to three)



Computing asked what the impact of this investment had been – and the answers were positive. For those who had invested, the most frequently reported benefit, by 28 per cent of respondents, was that “time to insight improved”. Closely following were “time to deliver report packs has decreased” (22 per cent) and “users can confidently use data for decision-making,” reported by 21 per cent.

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Positive as these findings initially sound, it is important to note that the bulk of investment in BI platforms was only partial – upgrading existing platforms with additional modules, better integration with other applications etc. This activity might well be indicative of organisations soldiering on with platforms which aren't really up to the job of delivering the insight required, but are continually pushed down the list of areas requiring significant investment. This suggests the existence of a perception among decision makers that BI isn't really going to deliver value for money.

It is also true that more than a third of respondents (35 per cent) had invested either the bare minimum in BI platforms, or not at all. Why? The most frequently given reason in answer to this question was that BI was seen as a poor returner of investment. 31 per cent of respondents whose businesses had not invested in BI said that perceived value from decision makers was low.

Why are BI platforms perceived as such?

Where are Dashboards Falling Short?

The first area where dashboards are falling short of expectations is on their engagement of users. For a start, only a relatively small amount of business users are actually using BI dashboards on a regular basis. As Figure 2 illustrates, for a huge 71 per cent of those we surveyed, only a few people in their organisations use dashboards. Only eight per cent had around half of their employees using dashboards and just three per cent said that most of their staff did.

Fig. 2a : Are BI dashboards widely used within your organisation?

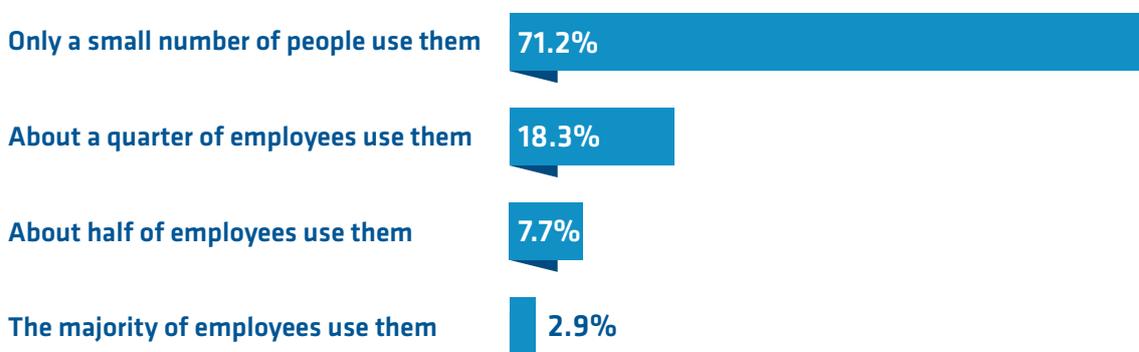
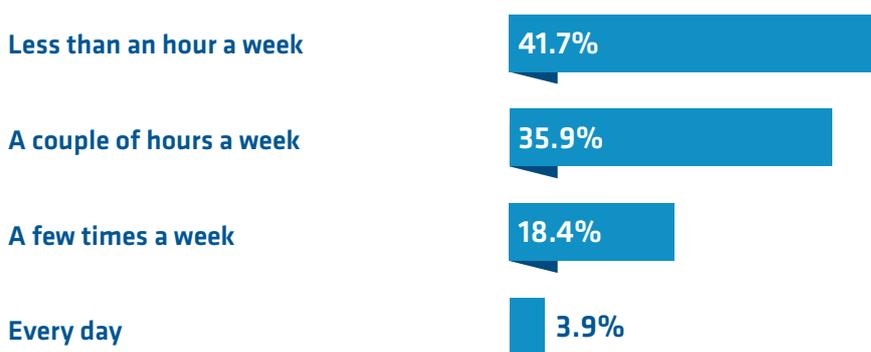


Fig. 2b : How often do you spend time using dashboards?



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Figure 2 also shows that when people do use dashboards, it isn't for long. 42 per cent did so for less than one hour per week, while 36 per cent racked up a couple of hours a week. Only four per cent of respondents used dashboards daily.

If so few people are using BI dashboards and using them so little, what is their use being limited to? This is the second key aspect of where dashboards are failing to match the expectations of users. Sixty-five per cent of our respondents said their businesses use dashboards for operational reporting and a further five per cent use them as a way to identify cost reductions. Only 23 per cent of our respondents used BI for strategic reporting.

These findings alone paint a pretty dismal picture of the extent to which BI dashboards are enabling the insight-driven model that businesses need and are typically not viewed as an area worthy of significant investment. Very few people are using dashboards, and the ones who are are mainly using them to simply identify events that have occurred. Using dashboards in this way does not make an organisation insight-driven. It barely qualifies an organisation as being data-driven. Using BI platforms in this way is basically monitoring. A user can see that an event occurred but no further understanding is possible. There is no context around data points, no insight, and no inspiration.

Perhaps this is why, when asked, **“Overall, is your current BI/Analytics tool set delivering on your expectations, to the business?”** only 16 per cent answered with an unqualified “yes”. Fifty-two per cent limited themselves to “Mostly.” Almost one third of respondents said their existing platform was either “not entirely” delivering or “not at all”. A technology which only delivers fully against expectations for 16 per cent of organisations deploying it is really not likely to remain in its present form for much longer.

When viewed through the prism of these findings, the reluctance to invest more than a relatively small amount of overall budget in BI makes sense.

Dashboards and Ease of Use

Having established the existence of a somewhat lacklustre view of what BI was capable of delivering to businesses and a low level of user engagement, our research moved on to discovering why this was the case.

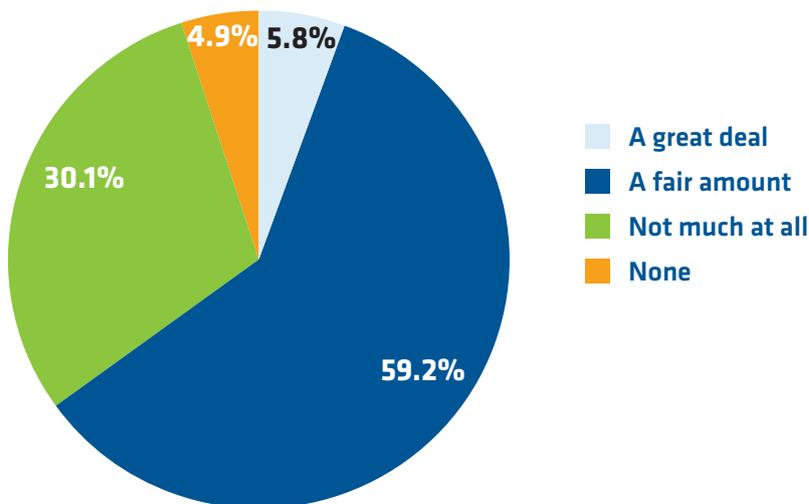
The first question in this area of research was, **“How easy is it to interpret the data and understand the business impact of what is presented in your dashboards?”** The finding that jumps out here is that only 23 per cent of respondents said their BI dashboards were very easy to use. This is a surprising finding because of the afore mentioned developments in BI dashboard marketing over the last few years, with many vendors keen to present more visually intuitive ways to view data. Self-service dashboards are supposed to present an easy opportunity to slice and dice this data. 46 per cent of respondents did say that it was “moderately easy” for them to do so. However, 20 per cent said that it took time to understand what was being presented and a further six per cent found it really difficult, with many having to go back to specialist data teams – more on that later.

It is striking that the 23 per cent of respondents who found their BI dashboards easy to use did so because they used the same ones all the time. In a business climate where the only constant factor is change, dashboards need to change along with evolving business requirements. There is a possibility that expectations of dashboards are being set too low if they are rarely expected to change.

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Because the creation of dashboards is so fundamental to the worth of BI, we asked, “In your opinion, how easy is it to create new BI/Analytics dashboards as requirements change?” 62 per cent of our respondents told us that creating new dashboards was at least moderately easy. However, for the remaining 38 per cent of respondents it was either moderately difficult or a major undertaking.

Fig. 3 : In your opinion, how much support do end users of your BI/ Analytics software require from data analysts/data scientist teams?



The answers to these two questions sit uncomfortably with those from previous questions on investment. *If, on the whole, BI dashboards are relatively easy to build and to interpret, why are so few people using them? And why are they considered such poor value for money?*

The ease with which insight can be drawn from BI dashboards is, in many organisations, related to how much support is necessary from data analysis/data science teams. In short, the more support required, the longer time to insight. Figure 3 suggests that, despite being reasonably easy to use, BI dashboards require considerable support from data specialists in order to actually deliver the answers business users are looking for. We asked, **“In your opinion how much support do end users of your BI/Analytics software require from data analyst/data science teams?”** By far the largest proportion of users – 59 per cent – required “a fair amount” of support. A further six per cent required “a great deal” of support. Whilst 35 per cent of respondents required little or no support, the fact that a majority did, does rather call into question the efficacy of self-service analytics.

Related to the fact above is the finding that in 49 per cent of organisations, fewer than five people are responsible for delivering analytics and insights in each business.

In a further 22 per cent of organisations, it is 10 people or fewer. With 58 per cent of survey respondents representing companies of more than 500 users, it’s worth noting that 25 per cent of those larger companies had only between one and five people delivering analytics and insights, with 32 per cent revealing only 6-10 staff delivering the analyses, and a further 32 per cent with 11-25 people delivering insights. The majority of the final 11 per cent of these companies of over 500 people employed between 26 and 50 people to deliver analyses, while only a tiny handful had 50 or more.

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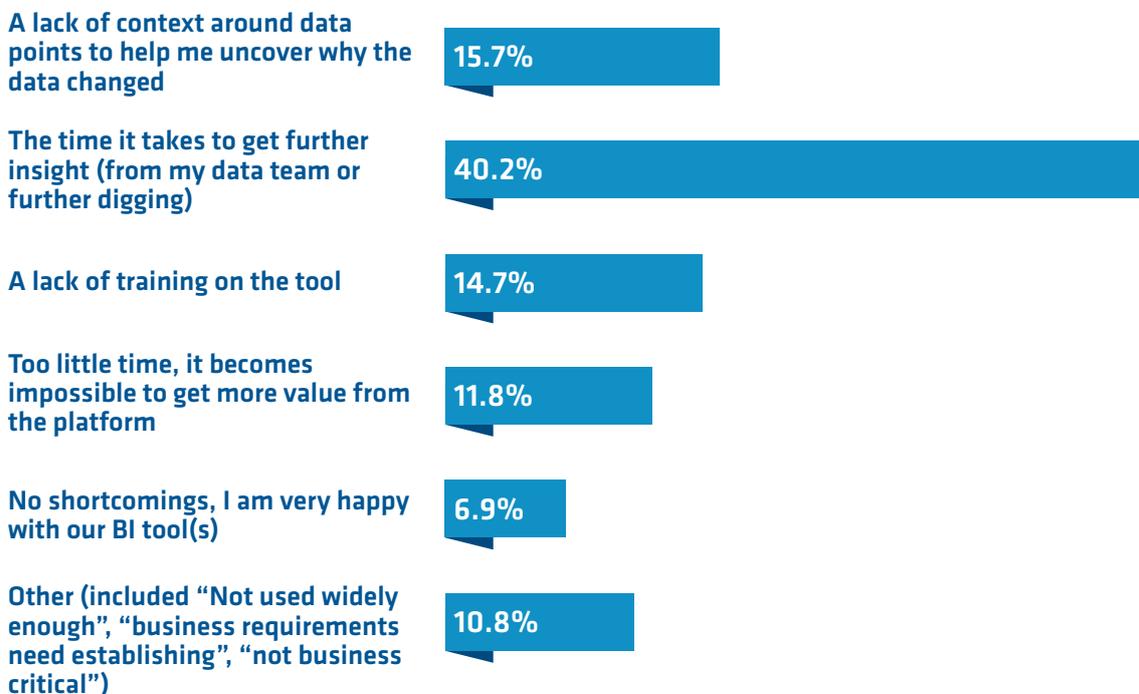
This means a round total of 50 per cent of organisations with staff over 500 people rely on 25 or less people to deliver analytics and insights for their entire enterprise. That's quite the bottleneck. Given how expensive data analyst and data scientist skills are to recruit and retain, it is unlikely that data teams will increase in numbers any time soon. A product that requires heavy input from these teams is going to be seriously limited in what it can deliver.

One of our final survey questions was, **“In your opinion, what is the biggest shortfall when considering the performance of your BI/Analytics platform?”** Figure 4 shows just how far many of our respondents' organisations have to travel before they can become truly insight-driven. By far the biggest proportion of respondents (40 per cent) answered “the time it takes to get further insight (from my data team or further digging.)”

For 16 per cent, a lack of context around data points to help uncover why the data changed is also a frustrating factor. Without context we can see only that an event has occurred – not why it occurred. Context is a fairly elastic concept within BI and analytics platforms. Context is used to describe anything from axis labels to storytelling. Any feature which requires data being open to interpretation by the business user cannot be described as contextual. The software needs to allow a thorough explanation of the data within context because the whole point of BI platforms is to try to reduce the scope for human error in decision making.

15 per cent were struggling with a lack of training which again speaks volumes on just how hard it is to extract insight from many BI dashboards.

Fig. 4 : In your opinion, what is the biggest shortfall when considering the performance of your BI/Analytics platform?



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All these factors are actively increasing time to insight and leading to less informed decision making – and the problems often stem from the dashboard itself. Although BI dashboards are more visually attractive and superficially more user friendly than they have been in the past, our research indicates that they are not helping business users to understand their businesses and customers any better. They do in fact, by virtue of their inflexibility and requirement for data analyst skills to optimise them and further dig into the data, constitute a significant barrier to businesses trying to make the transition from being a data-driven to an insight-driven organisation.

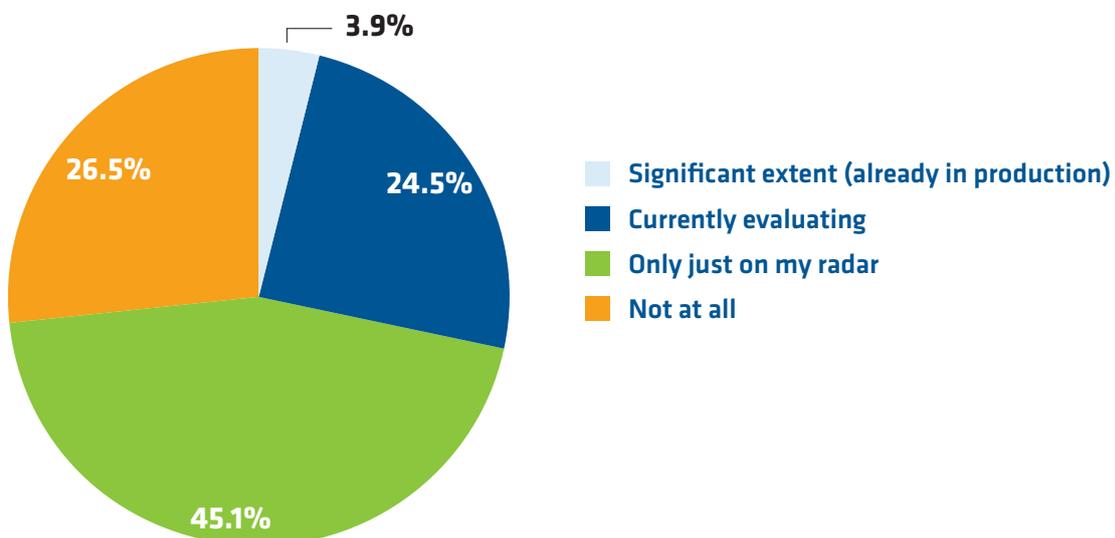
In short, BI dashboards are part of the problem rather than the solution they present themselves as.

Increased Automation and Smarter Ways of Working

The shortcomings of traditional BI dashboards have led businesses seeking greater insight to increase the use of automation within their data analytics.

We closed our survey by asking respondents, “**To what extent do you use AI-driven analytics or automation within your data analytics platform?**” Figure 5 shows that 29 per cent of our respondents were either already using AI-driven analytics or evaluating such a platform.

Fig. 5 : To what extent do you use AI-driven analytics or automation within your data analytics platform?



These 29 per cent of respondents are on a fast track to insight because automated analytics fundamentally change the notion of what is possible from BI platforms.

Automated analytics mean that analysis on live data can run continually in the background rather than users having to manually load data up into a workbook and then perform the analysis. Analysis is performed as events occur rather than after the fact. Machine learning means that

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signals within data are assigned importance based on how users react to them – both directly and indirectly. Essentially your BI platform can continue to learn from your behaviour even when you aren't interacting with it directly. Automated analytics is noise cancelling – only relevant, personalised signals are delivered.

Making sense of that signal is also much easier for users because context in the form of storytelling can also be automatically added to any signal. The use of natural language reduces the need for a specialist data interpreter. Instead of being the reluctant gatekeepers of insight, data analysts are freed to undertake more strategic, insight generating activity.

As well as reducing the burden on data analyst teams, automated data analytics also reduce the burden on the end user. None of these tasks have to be performed by them – they are free to act upon the insights found and make decisions accordingly. By tuning out the noise, automated analytics can focus business decision makers on the data that matters and drastically reduce time to insight.

Automation is the agent driving the change from being driven by insight as opposed to merely data.

Conclusions

Our research into BI dashboards has uncovered a number of issues with existing platforms and the perceptions of them within the enterprise. These can be summarised as follows:

- Investment in BI has only been partial, and has tended to be approved in the form of upgrading existing platforms rather than embracing new ones.
- BI platforms are often viewed as not delivering particularly strong return on investment, which is making businesses reluctant to invest in them further.
- These perceptions are linked to the fact that BI platforms are often used to a fraction of their full extent. They are slow to adapt to changing business requirements and they are relying too heavily on business users to slice and dice their own data to discover patterns.
- The majority of dashboards require significant input from specialists – and very small –data teams to optimise them and deliver the insight they promise.

Our findings, as well as uncovering a certain amount of dissatisfaction with BI dashboards, have also hinted at a suggestion that expectations of these dashboards are actually pretty low. Businesses are reluctant to invest because they seem unconvinced that BI can really deliver insight – and based on the evidence our survey has produced, they are probably right. Users expect to have to augment the analysis themselves – users are extracting the value from the data themselves and adding their own context. On most occasions, insight is unlikely to be drawn from the analysis and, even if patterns are chanced upon, the process takes a long time.

This combination of factors lead to what our respondents told us is the biggest shortfall in their BI/Analytics platforms – the time it takes to find insight. BI dashboards are failing in their key deliverable – to act as the conduit of insight. For organisations trying to progress from being driven by insight as opposed to data, they are not the solution. They are, in fact, the problem.

A model whereby the key deliverable of a product remains elusive is going to have to evolve, and automated data analytics represent the evolution of data analytics into a product capable of delivering what businesses need to survive and thrive in an unforgiving business climate.

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Only automation can deliver insight continually, because live data can be analysed in the background all the time. The need for a long and painful process to manually investigate events which had already occurred is removed, and machine learning continually fine tunes its search for meaningful, relevant signals. The result is personalised delivery of insight, to the right person at the right time – in language they can understand.

Based on our research, the 45 per cent of our respondents who told us that AI-driven analytics had just entered their radar (and, for that matter, the 27 per cent who registered no interest in it at all) are likely to fall behind in the race for insight. Restricting business users to finding data insights within the constraints of a dashboard is no longer enough to prosper in an era where businesses are awash with data.

Automated data analytics fundamentally changes the notion of what is possible with a BI platform. It's time we all raised our expectations.

About the sponsor, Yellowfin

Yellowfin provides a Business Intelligence (BI) and analytics platform aimed at solving real enterprise analytics challenges and helping business people understand not only what happened, but why. Founded in 2003 in response to the complexity and costs associated with implementing and using traditional BI tools, Yellowfin is an intuitive, 100 percent web-based reporting and analytics platform. More than 27,000 organisations and more than three million end users across 75 countries use Yellowfin every day.

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