For: Application Development & Delivery Professionals

It's Time For A User-Driven Enterprise BI Strategy

by Boris Evelson, August 25, 2014

KEY TAKEAWAYS

Technology Management-Driven BI Is Not Necessarily Agile

Centralized BI infrastructure, support for mission critical applications, driving toward a single version of the truth are the strategies that allow organizations to reap multiple business benefits. These benefits, however, often come at the price of BI applications that are complex, inflexible, and slow to react to fast changing business needs.

Business-Driven Homegrown BI Applications Are Agile But Don't Scale

When technology management can't deliver, business users build their own BI applications focusing on instant gratification. But these efforts by non-technology professionals have their own set of challenges, and often result in applications that do not scale, contribute to the proliferation of silos, and pose high operational risk.

Forrester Agile BI Approach Lets You Have The BI Cake And Eat It Too

Embrace Forrester's Agile BI -- processes, organizational structure, and technologies that enable decision-makers to be more flexible and responsive to the fast pace of business requirements changes -- to balance business users' need to produce their own content, while reducing risk and data silos, and achieving economies of scale.

It's Time For A User-Driven Enterprise BI Strategy

Vision: The Business Intelligence Playbook

by Boris Evelson
with Holger Kisker Ph.D., Martha Bennett, and Nasry Angel

WHY READ THIS REPORT

John Wanamaker, considered the father of modern advertising, said: "Half the money I spend on advertising is wasted; the problem is I don't know which half." Today, we can ask the same question of a company's investment in business intelligence (BI), analytics, and big data. Even after doing their best for over 20 years to build centralized, scalable information architecture, Forrester surveys always find that only a small percentage of organizations' data is actually converted to useful information in time to leverage it for better insight and decisions. At both strategic and tactical levels, much of this quagmire can be explained by the fundamental disconnect in goals, objectives, priorities, and methods between technology management professionals and the business users they should ideally serve. This report will help AD&D pros deconstruct the inherent conflict between roles to reach a clear understanding of why the business and technology management BI relationship is broken. We will then present our readers with an innovative action plan that gets both technology management and business professionals aligned in order to win, serve, and retain customers.

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Notes & Resources

Forrester interviewed 15 vendor and user companies, including Clarity Solution Group, E&Y, Hexaware, iGate, InfoSys, Sonata Software, and Syntel.

Related Research Documents

The Forrester Wave™: Agile Business Intelligence Platforms, Q3 2014
July 3, 2014

Reset On Big Data
May 28, 2014

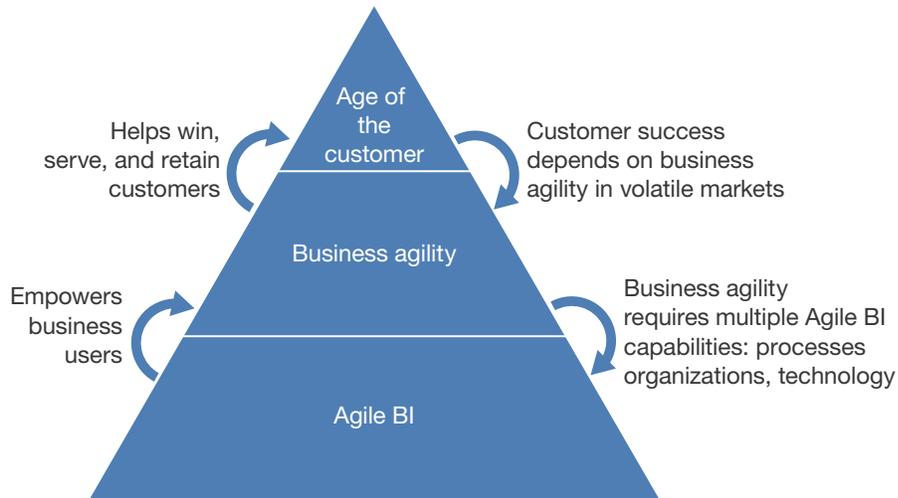Build An Agile BI Organization
January 25, 2013

BUSINESS AGILITY HINGES ON AGILE BI

The power to define how business is won has shifted into the hands of digitally empowered customers — both businesses and consumers — displacing information and control over distribution or manufacturing. With mobile devices, the Internet, and all-but-unlimited access to information about products, services, prices, and deals, customers are now well informed about companies and their products, and are able to quickly find alternatives and to use peer pressure to drive change. Forrester calls this the age of the customer .[1] But not all enterprises have readily embraced this new cycle; in fact just the opposite is true — there has been over 70% turnover for the Global Fortune 500 companies over the past 10 years.[2] If there's one common thread running through the profile of most of the companies which disappeared in that time period, it is that they did not succeed in managing change. Business agility — reacting to fast changing business needs — is what enables businesses to thrive amid ever accelerating market changes and dynamics.[3] What does the age of the customer mean in pragmatic and actionable terms to AD&D professionals working on BI initiatives? Forrester believes that in order to survive and succeed in the age of the customer, by focusing on and prioritizing business agility, AD&D pros should (see Figure 1):

- **Treat their business users just like customers — even when they are wrong, they are right.** Forrester finds that agile organizations make decisions differently by embracing a new, more grass-roots-based management approach. In addition to top down BI requirements, mandated by management, employees in the trenches, in individual business units, are the ones who are in close touch with customer problems, market shifts, and process inefficiencies. These workers are often in the best position to understand challenges and opportunities and to make decisions to improve the business. It is only when responses to change come from within, from these highly aware and empowered employees, do enterprises become agile, competitive, and successful. And it is only when technology professionals start listening to all business stakeholders, not just senior managers, that a more realistic picture of an effective and efficient BI environment becomes clear and actionable.

- **Embrace business agility, which sometimes trumps a single version of the truth.** A modern, agile world is not binary. A single version of the truth is relative to who's asking the question, and other contexts. If it is good and timely and addresses relevant customer data needs, then that takes higher priority in the age of the customer.

- **Enable business agility with Agile BI best practices and platforms.** Agile enterprises must gather customer and market knowledge and rapidly incorporate it into decisions. In order to support and promote business agility, enterprise knowledge workers must be empowered with easy access to agile, flexible, and responsive enterprise business intelligence tools and applications.

Figure 1 Success In The Age Of The Customer Hinges On Business Agility And Agile BI

Helps win, serve, and retain customers

Age of the customer

Customer success depends on business agility in volatile markets

Business agility

Empowers business users

Agile BI

Business agility requires multiple Agile BI capabilities: processes organizations, technology

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Source: Forrester Research, Inc.

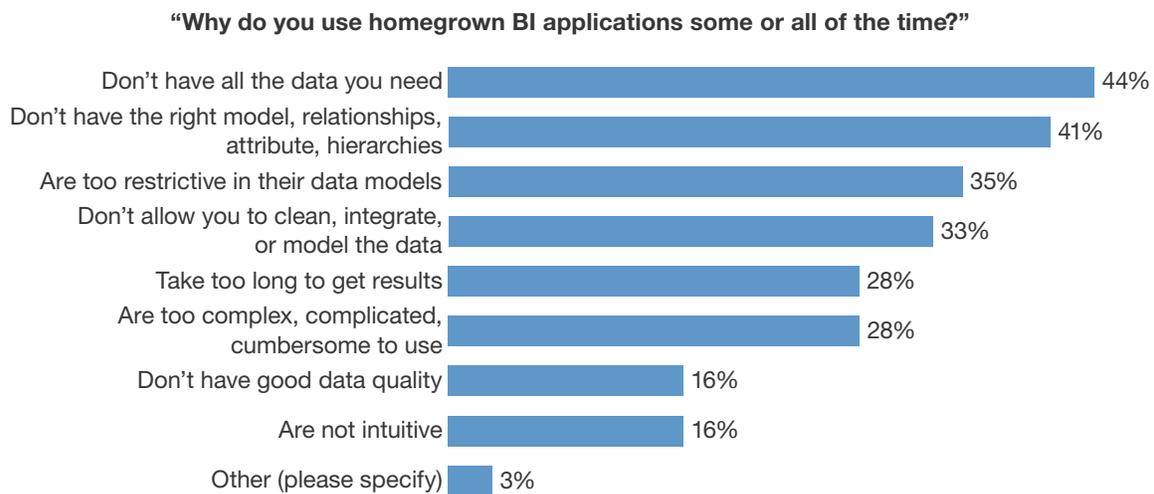## THE GOOD, THE BAD, AND THE UGLY OF ENTERPRISE BI

Unified information architecture, data governance, and standard enterprise BI platforms are all but a journey via a long and winding road. Even if one deploys the "latest and greatest" BI tools and best practices, the organization may not be getting any closer to the light at the end of the tunnel because:

- **Technology-driven enterprise BI is scalable but not agile.** For the last decade, top down data governance, centralization of BI support on standardized infrastructure, scalability, robustness, support for mission critical applications, minimizing operational risk, and drive toward absolute single version of the truth — the good of enterprise BI — were the strategies that allowed organizations to reap multiple business benefits. However, today's business outlook is much different and one cannot pretend to put new wine into old wine skins. If these were the only best practices, why is it that Forrester research constantly finds that homegrown or shadow BI applications by far outstrip applications created on enterprise BI platforms? Our research often uncovers that — here's where the bad part comes in — enterprise BI environments are complex, inflexible, and slow to react and, therefore, are largely ineffective in the age of the customer. More specifically, our clients cite that the their enterprise BI applications do not have all of the data they need, do not have the right data models to support all of the latest use cases, take too long, and are too complex to use (see Figure 2). These are just some of the reasons Forrester's latest survey indicated that approximately 63% of business decision-makers are using an equal amount or more of homegrown versus enterprise BI applications. And an astonishingly miniscule 2% of business decision-makers reported using solely enterprise BI applications (see Figure 3).

■ **Business-driven homegrown shadow BI is Agile but not scalable.** Successful businesses are now focused on having fast reaction times, a bottom up, grass roots approach to information, tolerating a higher level of risk in exchange for near real-time information and empowering business units with the information they need to best serve the customer. When enterprise technology management can't deliver, business users build their own applications focusing on agility, flexibility, and reaction times (being reactive is a good thing in the age of the customer). Alas, these noble efforts by non-technology professionals have their own set of challenges, and often result in applications and environments that do not scale, contribute to the proliferation of silos, take organizations farther from a single version of the truth, and pose high operational risk.

Unfortunately, this results in an ugly reality for BI strategy and the BI journey in many organizations: Business and technology stakeholders are disconnected and use different platforms, and true business requirements and priorities are lost in translation. The result is a lose-lose-lose where customers don't get what they want, and business and technology pros spend too much time arguing over and supporting their own agendas, and often feel like they've reached a fork in the road and must go their separate ways (see Figure 4).

Figure 2 Top Reasons For Not Using Enterprise BI Applications

"Why do you use homegrown BI applications some or all of the time?"

Don't have all the data you need	44%
Don't have the right model, relationships, attribute, hierarchies	41%
Are too restrictive in their data models	35%
Don't allow you to clean, integrate, or model the data	33%
Take too long to get results	28%
Are too complex, complicated, cumbersome to use	28%
Don't have good data quality	16%
Are not intuitive	16%
Other (please specify)	3%

Base: 241 North American business decision-makers using homegrown BI apps
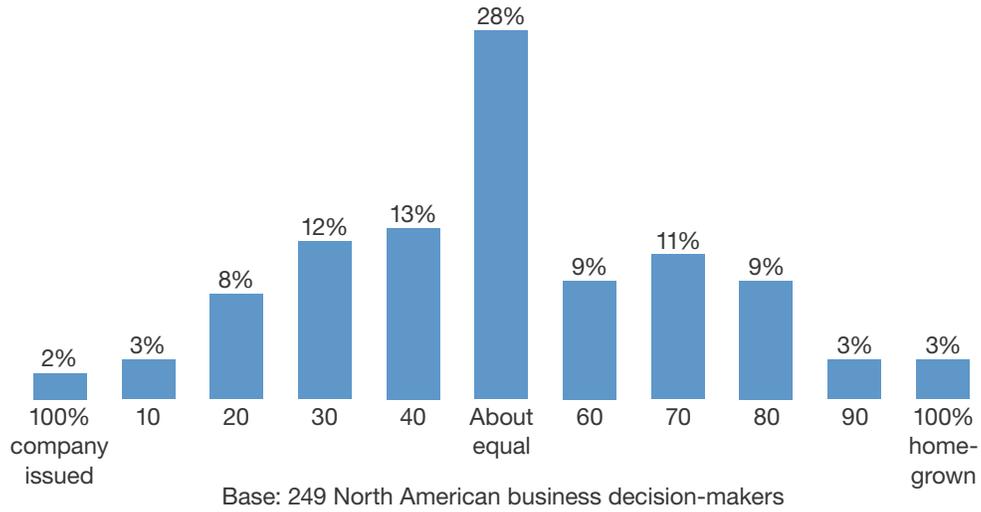
Source: Forrester's Business Technographics® Global Data And Analytics Survey, 2014

115628
Source: Forrester Research, Inc.

Figure 3 Majority Of Business Users Supplement Enterprise BI With Homegrown BI Applications

"How would you describe the BI applications or tools that you use? Are they primarily company-issued, or are they 'homegrown'?"

Base: 249 North American business decision-makers

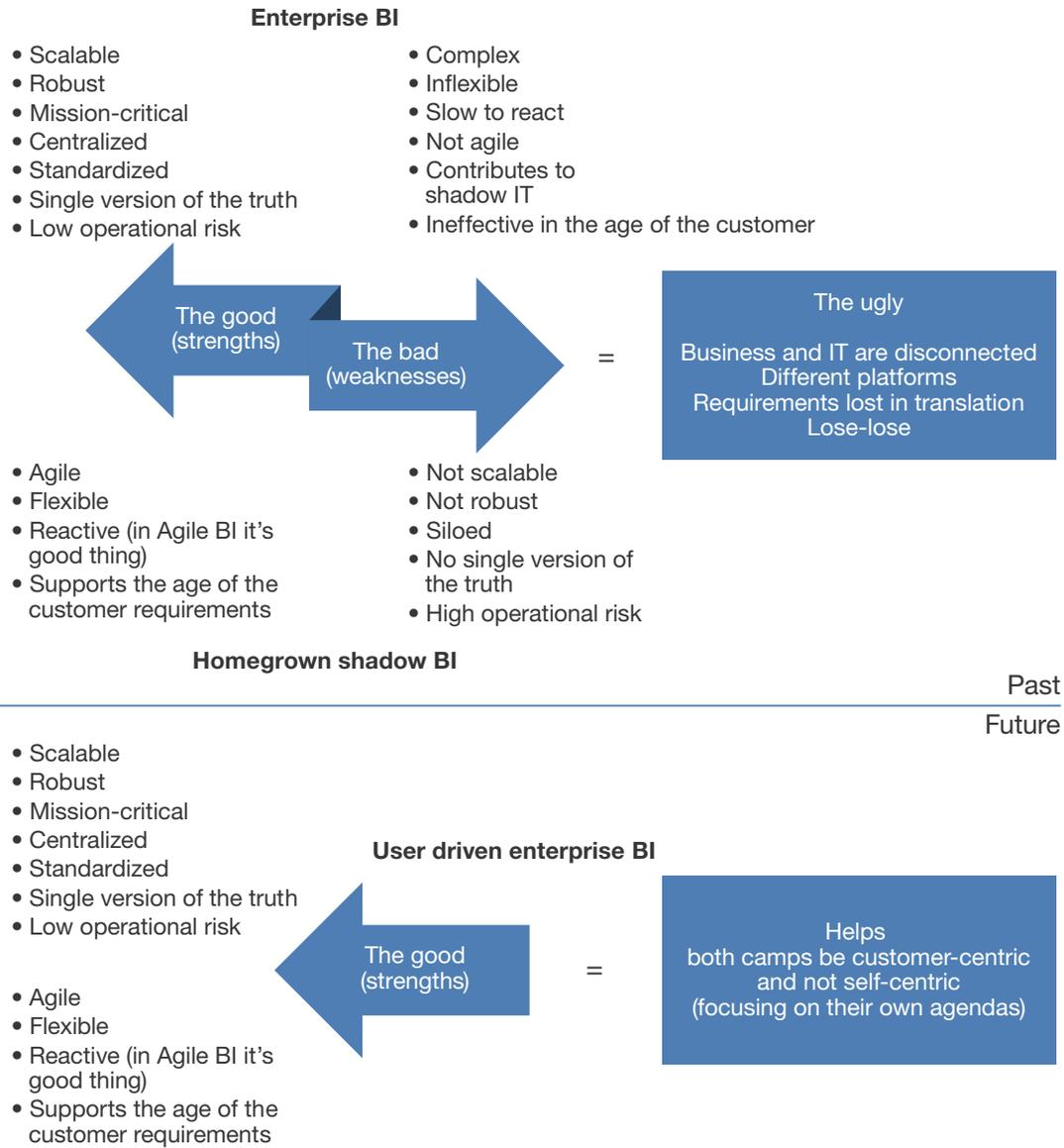Source: Forrester's Business Technographics® Global Data And Analytics Survey, 2014

115628   Source: Forrester Research, Inc.

Figure 4 How To Retain The Good From The Good, The Bad, And The Ugly Of Enterprise BI

Enterprise BI

- Scalable
- Robust
- Mission-critical
- Centralized
- Standardized
- Single version of the truth
- Low operational risk

- Complex
- Inflexible
- Slow to react
- Not agile
- Contributes to shadow IT
- Ineffective in the age of the customer

The good (strengths)

The bad (weaknesses)

=

The ugly

Business and IT are disconnected
Different platforms
Requirements lost in translation
Lose-lose

- Agile
- Flexible
- Reactive (in Agile BI it's good thing)
- Supports the age of the customer requirements

- Not scalable
- Not robust
- Siloed
- No single version of the truth
- High operational risk

Homegrown shadow BI

Past

Future

- Scalable
- Robust
- Mission-critical
- Centralized
- Standardized
- Single version of the truth
- Low operational risk

- Agile
- Flexible
- Reactive (in Agile BI it's good thing)
- Supports the age of the customer requirements

User driven enterprise BI

The good (strengths)

=

Helps
both camps be customer-centric
and not self-centric
(focusing on their own agendas)

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Source: Forrester Research, Inc.

THE ULTIMATE ANSWER LIES IN — A DRUM ROLL, PLEASE — AGILE BI

It's clear that neither approach — technology-driven enterprise BI, nor business-driven homegrown shadow BI — is enough on its own in modern 21st century organizations. So how does an organization have the BI cake and eat it too? How does an organization balance business users' need to produce their own BI content with little dependence on complex technology processes and infrastructure, while at the same time minimizing enterprise risk, achieving economies of scale, and getting rid of silos? The answer lies in business-driven Agile enterprise BI (see Figure 5).

Forrester defines Agile BI as an:

> *Approach that combines processes, methodologies, organizational structure, tools and technologies that enable strategic, tactical, and operational decision-makers to be more flexible and more responsive to the fast pace of customer, business and regulatory requirements changes.*

Figure 5 Four Components Of Forrester Agile BI

115628   Source: Forrester Research, Inc.
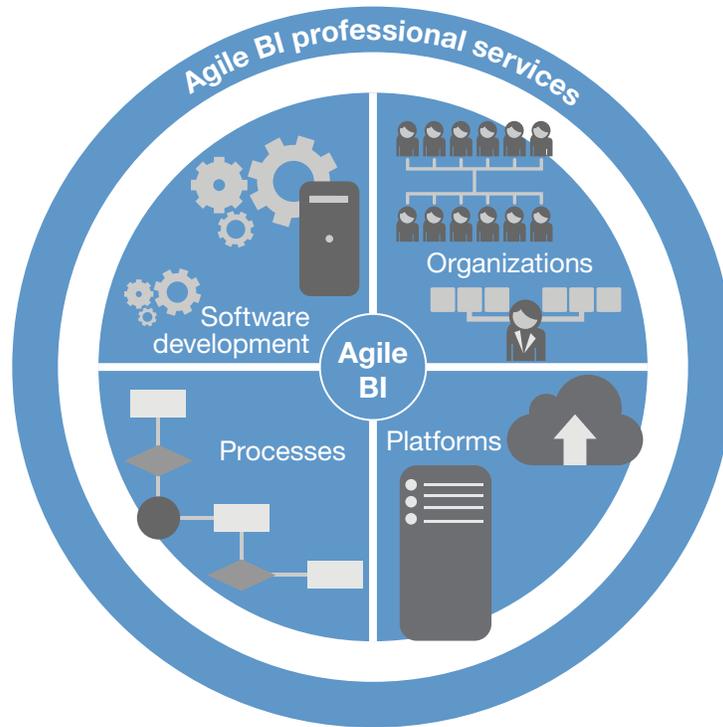
Part 1: Agile BI Software Development

The first and the minimum basic requirement for Agile BI is Agile software development and delivery. Forrester clients have told us for many years that long waterfall software development life cycles (SDLCs) take too long and are ineffective for BI. Forrester agrees that the long BI SDLCs carry significant drawbacks, such as:

- **Requirements gathering processes that take too long.** In the modern world, where change is the only constant, even a one day requirements gathering exercise may produce documentation that becomes outdated as it is being developed! While your BI team was locked in a room reconciling differences and negotiating priorities, your competitor may have dropped prices and introduced new products. Or an Internet story about your product or service may have gone viral and you need to drop everything and react.

- **People who often do not say what they truly mean.** Office workers may be pressured into expressing "politically correct" views based on top down mandates, office politics, and a natural desire to secure and not jeopardize that well deserved bonus or a promotion. But when they go back to their offices and cubicles these employees do what actually needs to be done to address the daily operational and tactical necessities, often using homegrown desktop applications.

- **True BI requirements that only materialize after apps are delivered.** BI is unlike most other enterprise software, where most of the requirements can and should be defined upfront. At best, one can only strive to define a small portion of the specifications, like data sources and data sets. Further detailed requirements for formatting, interactivity (sorting, filtering, prompting, etc.) will only come after the users can actually touch and feel or "play" with the application to achieve the "aha" moments (as in "aha, this is what I am really looking for"). And even more requirements for scalability will come only after the real application usage patterns (close to impossible to predict) get established and stabilize.

Forrester recommends learning from the mistakes many have already made in their long and perilous BI journeys, not trying to predict the future, but rather jump starting BI development cycles with:

- **Rapid prototypes.** Most modern BI platforms have desktop or cloud-based sandbox capabilities, where business users together with their technology professional counterparts can often build rapid prototypes faster than it takes to collect and document requirements on paper. In-memory-based platforms that do not require long cycles and database administrators (DBAs) to build data models come especially handy.

- **Rapidly deploying and learning from proofs of concepts (POCs).** Even the top BI experts can seldom be successful without some trial and error. In order to succeed quickly, Forrester recommends first learning how to fail quickly. Rapid prototypes achieve just that purpose — they allow one to fail quickly, learn from the mistakes (before they get noticed or too many resources get wasted), get progressively closer to the ultimate objective, and then demonstrate value with a stable POC which indeed delivers on the original promise.

■ **No more than two weeks apart from tangible, useable deliverables.** Just like in the story of Goldilocks and the three bears, Forrester often finds that a few days may be too soon and a few months may be too long between tangible BI deliverables. Two weeks seems to be just right. Indeed, a few leading management consulting firms are now building such a two-week cycle into their standard BI project plan templates.

Part 2: Agile BI Organizations

Implementing Agile BI software development best practices may only get you part of the way to your goals if an organization itself is too siloed or too centralized (two ends of the extreme). Forrester recommends forming a BI center of excellence/competency center (CoE/CC) which in turn promotes a best practice "middle of the road" approach for creating Agile, while still maintaining well governed organizations.[4] One best practice calls for separating and only loosely coupling organizations which support data management and preparation (more centralized, more technology driven) versus teams that support data usage (more decentralized, more business driven), as in reporting and analytics. Another best practice may be to separate support organizations for customer-facing front-office BI applications from non-customer facing back-office BI applications since they tend to have different requirements and tolerances for data risk, latency, and accuracy. Last but not least, Forrester recommends a hub-and-spoke organizational approach that mimics the organizational structure of the rest of the business. For example, if your finance and HR organizations are centralized, create a centralized BI organization to support these business functions. On the other hand, if you have multiple — i.e., regional — marketing departments, which go after different types of customers, products, and services in each region, and there's little to no overlap in their data requirements — don't fight that battle, give these regional departments their own BI support specialists.[5]

Part 3: Agile BI Platforms

Agile BI is not synonymous with business users self-service; it's not just about being intuitive and user friendly — it is much more. In a related recent research report — The Forrester Wave™: Agile Business Intelligence Platforms, Q3 2014 — we identified 72 features and capabilities across categories such as business users being able to: a) provision their own BI applications and data sets; b) perform some data integration and data mashups tasks right within the BI platform; c) automate BI, getting rid of manual steps; e) make information exploration and discovery more effective and intuitive; and d) use data visualizations to further drive insights.[6] We also evaluated the capabilities of the top 16 BI vendors against these Agile BI requirements.[7]

Part 4: Agile BI Processes

A few years ago facilities planners at the University of California, in Berkeley, noticed a pattern: no matter where they installed paved walkways, students and faculty still generated their own foot paths through lawns, based on convenience, not rules. Even when university grounds planners put up barriers to prevent people walking on the grass — humans did what they always do, they walked

around them. The battle of technology management trying to impose rules and regulations on business users has been fought and lost. BI pros, we implore you to only fight these battles when and where they absolutely have to be fought! For example, reporting and analytics surrounding pharmaceutical drug trials subject to FDA regulations have to be set in stone, signed, sealed, and approved by FDA. But outside of such extreme examples, Forrester recommends embracing what business users do anyway, monitoring what they do (watching where and how they walk on the grass), and leverage business-user-generated content for selective inclusion in enterprise production BI environments. While top down information architecture and project planning do not go away, Forrester recommends supplementing these strategic processes with some tactical enhancements, such as:

- **Enterprise BI environment monitoring processes.** It's paradoxical that technology pros often struggle with convincing their business counterparts to manage business by the numbers, not intuition, while not doing a great job themselves monitoring and managing enterprise BI environments by specific metrics. Enterprises still rely largely on intuition and qualitative hearsay assessments of business users' level of satisfaction with BI applications and tools. What Forrester terms "BI on BI," meaning the monitoring of enterprise BI environments and business-user-generated BI content for usage patterns, has a direct correlation to maturity and success.[8]

  One of Forrester's clients, a large global online retailer recently supplemented traditional strategic BI planning and requirements gathering with monitoring BI content generated in homegrown spreadsheets. They identified a few dozen complex pivot tables that business users were manually refreshing and distributing to their colleagues via emails on a daily basis. Technology management analyzed these pivot tables and implemented them as cubes in the production enterprise data warehouse (EDW). Business users were pleasantly surprised one morning when they received emails telling them that the manual processes had been automated and their jobs made easier. And this was all done without dragging business users into endless requirements gathering meetings — remember, especially for front-office workers, every hour spent in internal meetings is an hour not reaching out to customers, which equals potentially lost opportunities.

- **Three-tier enterprise BI environment.** As we saw in one of the earlier examples, the majority of BI content resides in homegrown BI applications. Rather than fighting this battle (a losing proposition), AD&D pros should change the status quo by empowering business users with BI sandboxes — desktop, server, or cloud-based environments where business users can procure their own BI applications, connect to any data sources, and analyze the data without limitations of fixed data models or schemas of enterprise data warehouses and data marts. This is where 50% of all BI content should end up. As a next step, enterprise BI platforms should have the capability to allow users to promote BI content and models they generated in sandboxes to shared environments, where their colleagues can collaborate on and leverage user-generated reports, dashboards, and models. Forrester often finds that another 30% of all enterprise BI content resides in such user-generated, collaborative, shared environments (see Figure 6).

■ **Leveraging of user-generated BI content for mission critical applications.** Once BI technology managers empower themselves with BI on BI, they can make informed, quantitative decisions on what business-user-generated BI content is ready for the next step — moving it to production, with all of the security, scalability, and risk management steps associated with such a move. Forrester recommends that organizations establish their own levels of tolerance for what can be left in sandboxes and user-generated shared BI environments, versus what content should be productionalized. Forrester recommends establishing thresholds based on data volumes, complexity of data integration, number of data sources, frequency of access, number of users involved, etc. These rules and BI on BI processes, in Forrester's opinion, should be key functions of the enterprise BI CoEs/CCs.

Figure 6 Forrester's Recommended Three-Tiered User-Driven Enterprise BI Environment
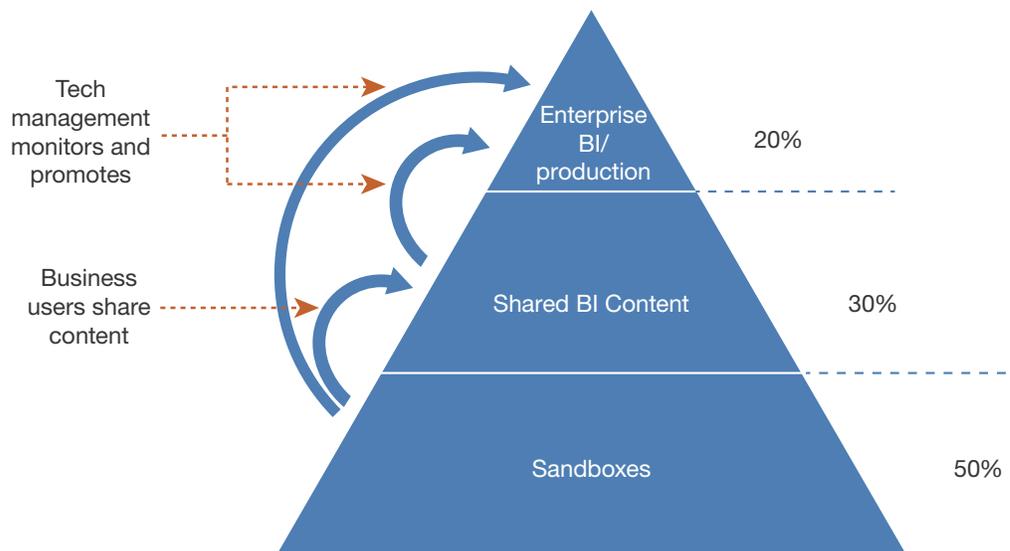
115628 Source: Forrester Research, Inc.

RECOMMENDATIONS

GET ON BOARD WITH AGILE BI OR RISK FALLING BEHIND

AD&D pros should merge technology-driven enterprise BI with business driven homegrown shadow BI in a win-win-win merged environment of business driven agile enterprise BI by:

■ **Realizing that old approaches to enterprise BI are no longer sufficient.** Traditional technology-driven approaches to enterprise BI that emphasize centralization, rationalization, single version of the truth, scalability, and reduced costs and risk were all strategies that took enterprises in the right direction. These environments help millions of organizations

throughout the world with streamlined top down strategic, tactical, and operational management. However, even the most successful BI implementations only scratch the surface of all possible use cases and insights that enterprise data can provide.

- **Learning how to pick BI battles.** Not every BI project needs 100% accurate, trusted data — many of them do, but not all. Furthermore, as organizations strive for a single version of the truth, they will find that the two-dimensional (accurate, trusted versus not trusted) world of enterprise data is outdated. For example, data that used to be contained in a single customer record has been replaced by relative, contextual information. A customer record in your customer relationship management (CRM) system may include the customer's tweets about your brand saying that he loves your new product, even as he's on the phone telling your call center that he's going to abandon your service next month. These interactions contain conflicting messages, but both are a true part of a multidimensional view of modern 21st century customer data.

- **Embracing the new world of business-driven Agile enterprise BI.** There's a reason for the letter "B" in BI — it's business, not technology intelligence. Leave the creation of most of BI content to people in your organization who have the intimate knowledge of the customer, regulatory, and other business requirements. But empower them with tools and platforms that will make them think twice before resorting back to spreadsheets. Ensure that the enterprise BI tools do have all of the agile capabilities of spreadsheets, while residing on a scalable, robust, and secure large enterprise grade BI platform. Then, AD&D pros can operationalize/productionalize (test, QA, scale, secure, etc.) business-user-generated BI content and applications as necessary. In the modern age of the customer, this approach will ensure that both camps are customer-centric, rather than self-centric (focusing on their own agendas).

SUPPLEMENTAL MATERIAL

Methodology

Forrester's Business Technographics® Global Data And Analytics Survey, 2014, was fielded to 1,658 business and technology decision-makers located in Australia, Brazil, Canada, China, France, Germany, India, New Zealand, the UK, and the US from SMB and enterprise companies with 100 or more employees. This survey is part of Forrester's Business Technographics and was fielded from January 2014 to March 2014. ResearchNow fielded this survey on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates. We have provided exact sample sizes in this report on a question-by question basis.

Each calendar year, Forrester's Business Technographics fields business-to-business technology studies in 10 countries spanning North America, Latin America, Europe, and Asia Pacific. For quality control, we carefully screen respondents according to job title and function. Forrester's

Business Technographics ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of business and technology products and services. Additionally, we set quotas for company size (number of employees) and industry as a means of controlling the data distribution and establishing alignment with IT spend calculated by Forrester analysts. Business Technographics uses only superior data sources and advanced data-cleaning techniques to ensure the highest data quality.

ENDNOTES

[1] For more on how empowered customers are disrupting every industry, see the October 10, 2013, "Technology Management In The Age Of The Customer" report.

[2] Forrester explored and validated these projections with Global Fortune 500 data and found that over 70% of companies experienced turnover between 2002 and 2012 in the Global Fortune 500. Other studies have reached similar conclusions. For example, a high and increasing corporate turnover trend was observed in Built to Change: How to Achieve Sustained Organizational Effectiveness, by Chris Worley, senior research scientist at USC and professor at Pepperdine University. He projected that corporate turnover would reach 70% for the 2003 to 2013 decade. Source: Chris Worley and Edward E. Lawler III, Built to Change: How to Achieve Sustained Organizational Effectiveness, Jossey-Bass, 2006.

[3] For practical examples and insight on organizations that have made market, organizational, and process changes based on digital strategies to become more agile, see the June 17, 2014, "Business Agility Starts With Your People" report.

[4] For a clear guide on how to align your BI organization for agility, see the January 25, 2013, "Build An Agile BI Organization" report.

[5] For best practices for building a successful CDM support organization and a guide on how to interact with all stakeholders in a truly customer-centric enterprise, see the November 4, 2013, "Build An Agile Customer Data Support Organization" report.

[6] For a deep dive into what the key differentiating criteria are for Agile business intelligence, see the July 3, 2014, "Forrester's Agile BI Capabilities Self-Assessment Model" report.

[7] For more on this topic, see the July 3, 2014, "The Forrester Wave™: Agile Business Intelligence Platforms, Q3 2014" report.

[8] For some best practices as well as tools to optimize and streamline BI platforms, tools and application, see the May 2, 2013, "BI On BI: How To Manage The Performance Of BI Initiatives" report.

About Forrester

A global research and advisory firm, Forrester inspires leaders, informs better decisions, and helps the world's top companies turn the complexity of change into business advantage. Our research-based insight and objective advice enable IT professionals to lead more successfully within IT and extend their impact beyond the traditional IT organization. Tailored to your individual role, our resources allow you to focus on important business issues — margin, speed, growth — first, technology second.

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