



Making Business
Intelligence Easy

White Paper
Agile Business Intelligence

Contents

Overview	3
The need for Agile Business Intelligence	4
Technology: Critical features of an Agile Business Intelligence application	6
Culture: Creating a business environment to support Agile Business Intelligence	9
Process: How to achieve agile development	10
Yellowfin: An Agile Business Intelligence solution	11
Summary.....	12

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Overview

As the father of evolutionary theorem, Charles Darwin, said: “It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptive to change.”

Agile Business Intelligence (BI) is about an organization’s ability to adapt its BI program to meet the changing needs of the business and its operating environment. Agile BI incorporates both a technical and process-oriented approach to managing the delivery of BI projects.

To achieve Agile BI, organizations must provide and establish the necessary tools and conditions in a manner that enables them to deliver a BI project capable of quickly and effectively responding to the changing and imprecisely articulated needs of the BI user. Agile BI does not merely refer to building and developing things rapidly, but building and developing the right things rapidly. This requires three critical components:

- Technology: The actual BI application and its capabilities and capacity to underpin agile development
- Culture: Creating a supportive business environment for the introduction and ongoing support of a BI solution
- Process: The way in which a BI solution is developed to meet the specific needs of an organization

Demand for Agile BI is growing quickly. Businesses across a broad range of industries and sectors are demanding more flexibility, better Return on Investment (ROI) and greater responsiveness from their BI programs under shifting market conditions, intensified competition and continually shrinking timelines.

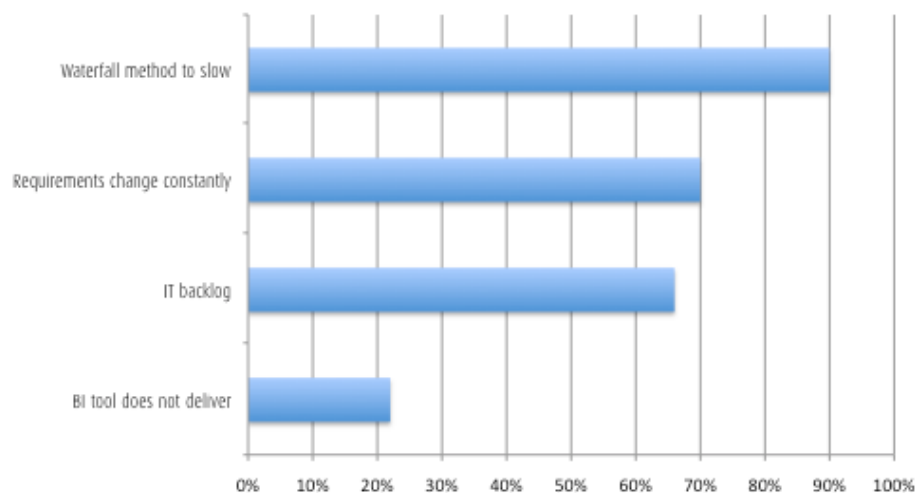
Agile BI refers to the technology, content development and implementation, and also the organizational benefits sought – the ability to respond swiftly to changing market conditions. Implementing a successful Agile BI solution is as much an approach, and mentality towards business reporting and analytics, as it is a methodology driven by the new technology itself.

This paper focuses on Agile BI as opposed to Agile Data Warehousing and the back-end components of reporting and analytics (building data marts, data collation and cleansing, etc).

The need for Agile Business Intelligence

Over the past few decades, the way in which companies need to collate, analyze, report and share their data has changed dramatically. Organizations need to be more adaptive, have increased access to information for decision-making, and effectively deal with a rapidly growing volume of data.

However, until recently, BI tools and their user-base have remained static and not kept up with changing demands. Now, the BI industry has reached a tipping point. The way businesses use reporting tools, and the features and functions they demand from them, is in the process of fundamental change.



According to a survey of 172 US senior software and IT executives by *The Society for Information Management* (SIM), BI continues to be considered the most important technology investment, and Agile BI development methodologies will be a priority investment for 2010 and beyond. Business productivity and cost reduction are viewed as the most important issues surrounding the IT profession, with the implementation of Agile BI projects seen as the best avenue to address those concerns, providing flexibility and lower Total Cost of Ownership (TCO).ⁱ

Traditional BI applications utilized by select power-users, and the processes and culture that accompany them, are incapable of providing data analysis with the speed and flexibility now demanded. Businesses from across all industries and sectors are now demanding BI projects that can adjust to meet their frequently changing data analysis requirements. A recent Forrester Research report demonstrates the point, with 66 percent of the 226 business and IT survey respondents stating that their BI requests were back-logged because IT staff were too busy to deal with them in a timely manner; and 70 percent said that their BI requirements changed on a monthly, daily, or even hourly basis. A further 22 per cent stated that they felt their requirements out-stretched the usefulness of traditional BI applications because their needs changed too often.ⁱⁱ The complexity and inflexible nature of traditional reporting tools, constraints of traditional BI rollout and waterfall delivery method, are now unacceptable to almost 90 percent of respondents. Businesses are demanding the flexibility that an Agile approach to BI provides.

Agile BI empowers more end-users with self-service BI, and agile development process means that IT teams work in short, iterative cycles based on end-user demand. Organizations are able to respond to rapidly changing market conditions and reporting demands, and deliver actionable insights in shorter timeframes.

Agile BI rollouts deliver organizations' this flexibility by:

1. Being faster to deliver
2. Increasing user adoption
3. Increasing ROI

Faster to deliver

The Agile methodology delivers results to the business rapidly because it focuses on short development cycles with multiple iterations. Each cycle or sprint aims to deliver a piece of a working solution in a production environment. This allows business users to start reaping the benefits of their BI solution faster, rather than having to wait months for the traditional waterfall approach to be completed.

Increased user adoption

In an Agile development process, IT and the business work together daily, refining the business needs through iterations and constant communication. This increases user adoption by focusing on the frequently changing needs of the non-technical business user, leading to high end-user engagement, and resulting in higher user adoption rates.

Traditional BI tools and development processes rely on highly technical users to create and distribute reports to decision-makers, resulting in an unacceptable lag between insight and action. Higher end-user adoption rates – more people with access to the benefits of quality BI – better equip any organization with the capacity to respond to, and take advantage of, opportunities and shifts in their business environment.

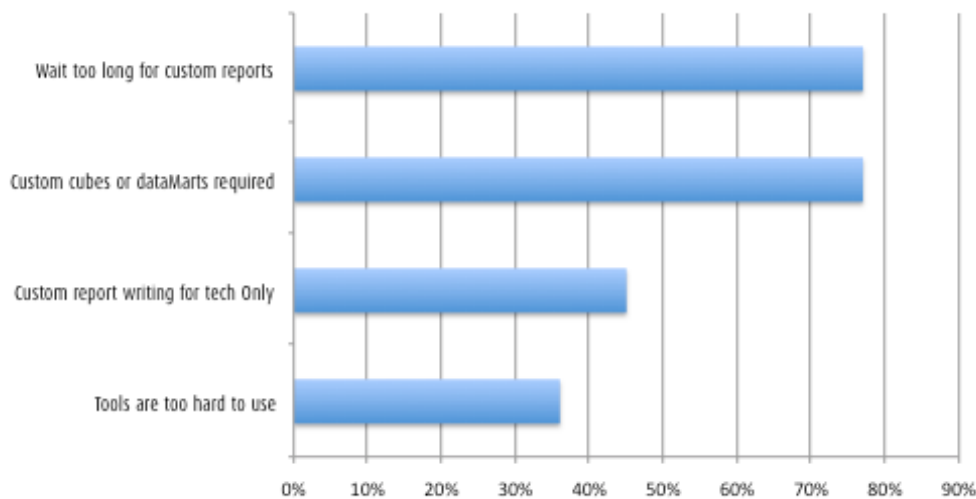
Increased ROI

Agile BI rollouts help organizations achieve higher ROI through shorter development cycles and business-user focused features that facilitate independent end-user interaction. This minimizes the amount of IT resources and time spent developing unused features, delivering working, relevant reports to end-users with regularity.

Technology: Critical features of an Agile Business Intelligence application

According to Forrester Research, BI solutions need to become more flexible and responsive to meet changing demands of business consumers. Traditional BI tools simply do not provide the platform to deliver Agile BI.

In their recent survey, 45 percent of respondents said that their current BI applications were between “somewhat difficult to learn and navigate” and “very difficult to learn and navigate”. A staggering 77 percent of survey participants stated that they do not have access/can not create custom reports independently and have to ask data analysts to generate reports for them, with 36 percent of report requests requiring a custom cube or data mart to be built. Seventy-seven percent of respondents also indicated that they had to wait from days to several months for their BI reporting requests to be met.ⁱⁱⁱ



So what does all this mean? The constraints and complexities of traditional BI tools severely restrict the ability to adapt and respond swiftly to changes in reporting needs. They are simply not agile enough.

Whether this demand for Agile BI is driven by the increased pace and complexity of business operating environments, or whether technological innovation pushes the pace, matters little. The need for Agile BI solutions is here to stay, and demand will only increase.

Traditional BI solutions have a poor reputation for being costly, with slow and inflexible development cycles. Traditional BI tools were designed for a select group of highly technical users, and are incapable of providing widespread user deployment because of their cost and complexity.

From a technological standpoint, an Agile BI tool must be:

1. Easy-to-use
2. A single integrated application
3. Able to connect to and report off multiple data sources

Easy-to-use

An Agile BI tool must enable self-service BI. To achieve this, business users, not technical users, must find it easy to use – the tool must be business user centric. Business users must be able to create and distribute their own reports and perform analytical queries without the need for IT support. There are three crucial technological components that facilitate this independent use:

- An intuitive user interface
- Functionally rich data analysis capabilities
- A comprehensive Meta-data layer

An intuitive interface allows users to easily use and navigate the entire BI application by maintaining a consistent and simple look and feel throughout. This reduces the amount of training and IT support required by business users, while simultaneously enabling rapid report writing and development.

However, the BI tool must be able to support independent business-user interaction without compromising on analytical capability. An application that is easy to use should not compromise on functionality. Empowering end-users with an easy to use, functionally rich BI solution, facilitates Agile BI. True Agile BI is not a compromise.

Additionally, a comprehensive Meta-data layer supports ease of use by eliminating the need for coding and SQL, allowing users to view and explore information in simple business language. This way, users can conduct self-service data analysis without having to comprehend the complexities of the underlying data or database.

Single integrated application

All the components of the BI tool, from the Meta-data layer to the dashboard, should be accessible via a single unified interface. This will ensure a consistent look, feel and fluid navigation from the back-end through to the front-end of the BI application. Traditional BI tools deliver the different components of a BI solution via separate products, resulting in higher cost and complexity. In turn, this leads to a cumbersome user experience. As well as being easier to use, a single integrated application is easier to deploy and more flexible to change. Rather than having multiple modules to navigate and learn; a single integrated application enables users to rapidly develop and publish their own BI content.

Multiple data sources

An Agile BI application must be able to connect to and report off multiple data sources, perform federated queries and have an in-memory database to support ad-hoc queries.

Multiple data sources

An Agile BI tool must be able to connect to and report off an array of data sources. Users should be able to use the same tool, with consistent interface, to easily and seamlessly query and navigate between data sources. OLAP, ROLAP or Excel spreadsheet – it shouldn't matter.

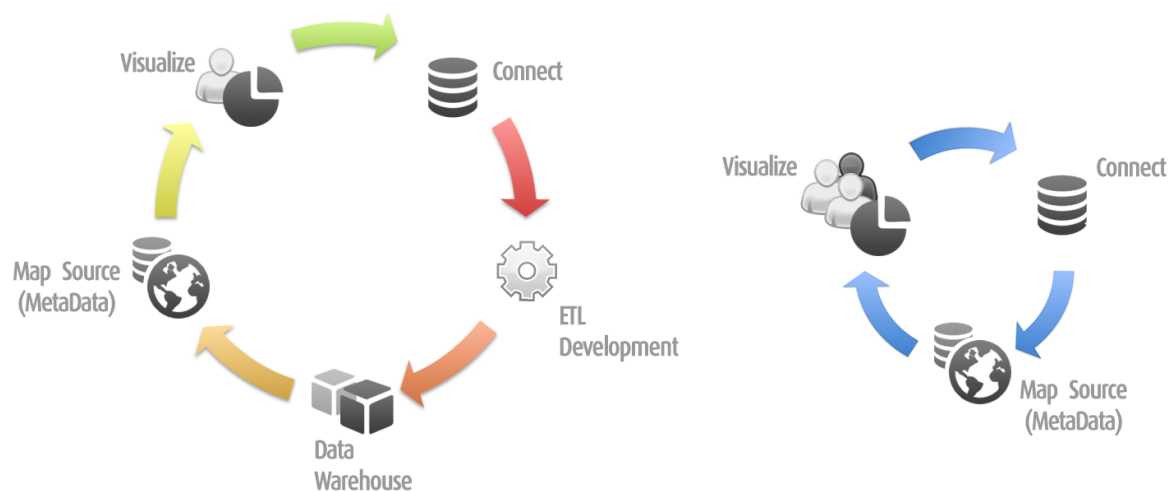
Federated Queries

The ability to conduct Federated Queries enables users to combine data from two separate data sources to create a single report without having to build a data warehouse to combine the data for the purpose of reporting and analysis. For example, an organization's sales data may be stored in one database, and its Human Resources (HR) data in another. Using a Federated Query, users can, from a single tool and interface, create a single report that uses data from both databases, to demonstrate the average sales revenue per employee.

Federated Queries reduce the resources, time and complexity associated with analyzing multiple data sources simultaneously.

Ability to generate reports from an in-memory database

In-memory analytics supports an Agile BI program by enabling faster analysis, rapid insights and ad-hoc reporting with minimal IT involvement. In-memory analytics eliminates the need to store pre-calculated data in the form of OLAP cubes or aggregate tables. It offers business users faster analysis, and access to analysis of large data sets, with minimal data management requirements. Business users have access to self-service analysis and IT departments can spend less time on query analysis, cube building, aggregate table design, and other time-consuming performance-tuning tasks. In-memory analytics removes some of the need for ETL and DWs, leading to substantially faster development compared to traditional models as seen in the figure below.



Culture: Creating a business environment to support Agile Business Intelligence

With Agile BI, the organizational culture towards reporting and analytics is just as important as the chosen BI technology, and the implementation and maintenance of that technology. To achieve true Agile BI, management must:

1. Encourage rather than guard data access
2. Enable daily collaboration between IT and business users
3. Accept that organizational BI needs change constantly

Encourage rather than guard data access

Equipping as many people as possible from across the organization with the skills and knowledge to access reporting and analytics is critical to Agile BI. Only through higher user adoption can a BI program achieve its potential ROI. Guarding data access is counter-productive.

IT and business users need to work together daily

Typically, IT and business departments are siloed. Under traditional BI development practices, end-users articulate a need in phase one of a project, then the project development team works on it for 6 – 12 months in complete isolation. Oftentimes, the end product is not what the end-user had envisaged, or, the need has shifted and the resources have been wasted. Agile BI requires that IT and business users work together on a daily basis. This may sound like a contradiction to a key benefit sought from Agile BI programs – reduced cost of BI delivery via reduced demand on IT resources – but it is not. Establishing an open and cooperative stream of dialogue between the IT department and business users will ultimately save both time and money. Supporting and encouraging daily business user interaction will ensure that IT are addressing and responding to the actual real-time reporting needs of end-users. This collaboration ensures that:

- Effective data analysis is used by the business as part of its decision-making processes
- IT resources are being used efficiently and effectively because they are responding to, and working on, the high priority needs of end-users
- Your BI reporting matches your business goals, avoiding the need for costly rework or redundancy

Recognize that Business Intelligence needs change constantly

Traditionally, the waterfall approach to building a BI solution is highly structured and regimented. The business and infrastructure requirements are all carefully defined and decided upon from the start. But a “set in stone” approach does not account for change. Management must accept that business circumstances and environments are constantly changing, and that because their data analysis needs will naturally change too, establishing an immovable, non-negotiable and exhaustive list of reporting requirements during BI planning is both impractical and wasteful. A flexible mentality that welcomes and embraces changing requirements must be employed, where agile processes harness change for competitive advantage.

Process: How to achieve agile development

Agile BI projects should focus on people over process. This does not mean that Agile BI is inherently opposed to thorough and careful development processes, but is guided by a minimalistic business user focused approach, to streamline development cycles. There are three key agile processes that should be adhered to to ensure an Agile BI rollout:

1. Iterative 'Sprint' development cycles
2. Automate ongoing BI processes
3. Adopt Barely Sufficient Processes

Iterative 'Sprint' development cycles

In Agile development methodology, teams work in 'sprints' to produce bite-sized deliverables in an iterative manner. Sprints can be one to four weeks long depending on the size and complexity of the project. At the end of each sprint, the business has a working deliverable, such as a new report or dashboard, delivered to them in a production setting.

By contrast, the waterfall development cycle used in traditional BI rollouts, is cemented in a regimented, sequential progression. It is inflexible to changing reporting needs and costly to make changes to. Agile BI, as a process, is about delivering functioning software regularly in short weekly or monthly timeframes – the shorter and more frequent the better (working software is the measure of BI success).

Agile BI is about responding to the immediate needs of the BI user, rather than working to establish and deliver ALL potential reporting needs upfront. To establish an approach that facilitates Agile BI, reporting objectives should be readjusted regularly based on available resources and intermediate business goals to help focus attention on what is really important. Working in this manner ensures the relevancy of reporting to business goals and enables a faster, more flexible approach to changing reporting needs.

Automate ongoing BI processes

Agile BI development teams must automate any repetitive tasks/processes to allow more time and focus to be spent on developing and delivering end-user features. For example, whilst critical, testing the BI system manually takes up unacceptable resources each and every sprint cycle. Automated testing conducted by the users actually involved in the development of new reports, means that new changes can be quickly tested within the sprint, rather than waiting to be processed by a separate testing team. This way, accountability resides within the team.

Adopt Barely Sufficient Processes

Minimizing the amount of 'ceremony' associated with BI development reduces the length of development cycles and allows development teams to concentrate on the work that matters. This minimalistic approach does not suggest that careful planning is unnecessary during the development process, but that formal planning and documentation should be aimed at satisfying the practical needs of the project. For example, a concept document for each sprint should focus on business user requirements and nothing more. Additional verbiage simply adds no value. Agile BI is just as much about maximizing the amount of work not done.

Yellowfin: An Agile Business Intelligence solution

Yellowfin is well positioned to help businesses address their agile reporting needs. Yellowfin enables organizations and IT departments across all industries to undertake crucial data analysis quickly, easily and effectively, to support efficient and competitive strategic operational practices and deliver outstanding ROI.

Yellowfin is the most user-friendly BI solution on the market, with its highly intuitive interface encouraging widespread end-user adoption, interaction, analysis and organization-wide collaboration.

Yellowfin provides a world-class Agile BI solution virtually out of the box, offering:

- A highly intuitive, yet functionally rich, end-user focused interface
- A Meta-data layer to reduce demands on technical personnel and support widespread independent data analysis and report building
- An in-memory database to support fast and flexible data analysis
- The ability to connect to and report off a large range of databases (including all tier one databases) and data sources simultaneously
- A single integrated application for fast and easy deployment and response to changing reporting needs

Yellowfin offers the technical requirements needed to deliver a successful Agile BI project.

Summary

This white paper has identified a gap between traditional BI systems and modern business analytics and reporting needs, and argued that Agile BI can bridge that gap. Agile BI has been defined as a methodology and technology that enables organizations to respond with flexibility and immediacy to changing reporting and analytics needs as a means of achieving competitive advantage. Agile BI rollouts facilitate this desire for organizational reporting and analytics flexibility by being faster to deliver, enabling higher ROI and supporting widespread end-user adoption.

The concept of Agile BI is divided into three equally important sub categories – Technology, Culture and Process. There are three critical components within each identified sub category that must be satisfied to achieve a successful Agile BI project. The BI technology must be a single integrated application, easy to use, and able connect to and report off multiple data sources. To create a supportive environment for the introduction and maintenance of an Agile BI program, management should actively work to establish a culture that encourages rather than guards data access, enables daily collaboration between IT and business users, and embraces changing reporting and analytics needs. Lastly, organizations should embrace BI processes that respond to business user demand, automate ongoing BI procedures wherever possible, and maximize the amount of work not done by adopting Barely Sufficient Processes.

Successful Agile BI deployments enhance organizational flexibility and responsiveness. Increasingly, businesses and their personnel are exploiting the benefits of Agile BI, allowing them to respond with immediacy to business demands. To survive and prosper in a competitive marketplace, businesses from all industries and sectors have to be able to scan their external environment, review their internal processes and make appropriate proactive and reactive changes. Modern companies are striving to spread fact-based decision-making throughout their organizations. Agile BI solutions, with their end-user centric approach, enable organizations' to anticipate and adapt to shifting market conditions.



Find out more

Contact Yellowfin at www.yellowfinbi.com
and ask for our proven roadmap to assist you
to successfully implement Yellowfin Agile BI
into your organization.

ⁱ The Society for Information Management's (SIM) annual research report – *2010 IT Industry Trend Survey*

ⁱⁱ Forrester Research report – *Agile BI: Best Practices for Breaking Through the BI Backlog*

ⁱⁱⁱ Ibid