# Integrating BI Into The Enterprise

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So far in our discussion around the creation of the intelligent business we have looked at the need for preparing BI for integration with business processes by looking first at introducing consistency and clarity across BI systems using common naming and definitions for the same subject data and metrics irrespective of where they are used. As a reminder, to clean up and integrate BI systems please refer to the sidebar below

## Tips For Improving BI Consistency

- Define a common business model for common definitions of dimensions and measures representing data in existing BI systems
- Identify inconsistent definitions across existing deployed analytical data models and BI tools and correct these
- Address data integration inconsistency in current projects
  - Introduce common staging so that data is cleaned and integrated once to staging areas and then supplied from there to existing BI systems.
  - Common ETL tool with common subject oriented ETL processes e.g. the customer ETL process, the product ETL process etc.
- Integrate the data modelling, ETL and front end tools on shared metadata by making use of CWM XMI metadata interchange standard supported by many vendors
- Integrate OLAP and relational data via Hybrid OLAP or OLAP in the RDBMS
- Integrate BI portals and other front-end BI tools into enterprise portals

We have also looked at the basic technology components needed to support the intelligent business highlighting a business intelligence platform, a business integration platform, corporate performance management software and a shared business vocabulary as important elements in an integrated solution. Finally in my November 2003 article we outlined the high level steps of intelligent business implementation that consisted of integrated business intelligence, enterprise business integration and finally intelligent business (the integration of BI with operational systems).

Intelligent business is about moving BI systems into the heart of the enterprise and 'wiring' BI up to operational systems so as to leverage it at every opportunity using an industry standard mechanism. In this article I want to start looking in detail at what has to be done to successfully integrate BI into

enterprise business processes so that people everywhere in the enterprise can leverage intelligence to help them contribute towards achieving specific strategic business objectives. To do this well involves a number of steps. The very first step is to create a business 'anchor point' - a strategic business objective that we are trying to help the business achieve. Hence the staring point for any intelligent business implementation project is to look at the strategic business objectives as documented in the company business strategy. People need to agree on a priority for these objectives so that a specific objective can be selected as the base for an intelligent business initiative. An example objective might be "reduce operational cost".

While this might seem a trivial step it is very deliberate because it immediately puts a specific purpose and business focus on an intelligent business project. Everything in such a project from this point onwards needs to relate back to this anchor point. The anchor point also acts as a validation of what you are doing. For example, if the aforementioned objective is selected as the anchor point then the valid question worth raising when considering what BI to integrate is obviously;

> "How is the BI you are integrating going to help people to reduce operational cost?"

This immediately puts focus on what you are trying to achieve. It is also likely that the executive owner of the selected objective will rapidly get behind such a project and give it sponsorship.

Having established a business anchor point, the next step is to identify two things:

- People in the organisation who can contribute to that objective
- All core business processes that these people participate in that are associated with achieving the objective

Essentially this investigative work involves following each core process from beginning to end mapping the business tasks, identifying all people associated with business process tasks, noting the applications used to perform the tasks and the rules that apply. The key is to identify what BI is needed in each business process task to help achieve the objective, how to integrate that BI and where the required BI is located. Figure 1 shows an example of an order entry and tracking business process.

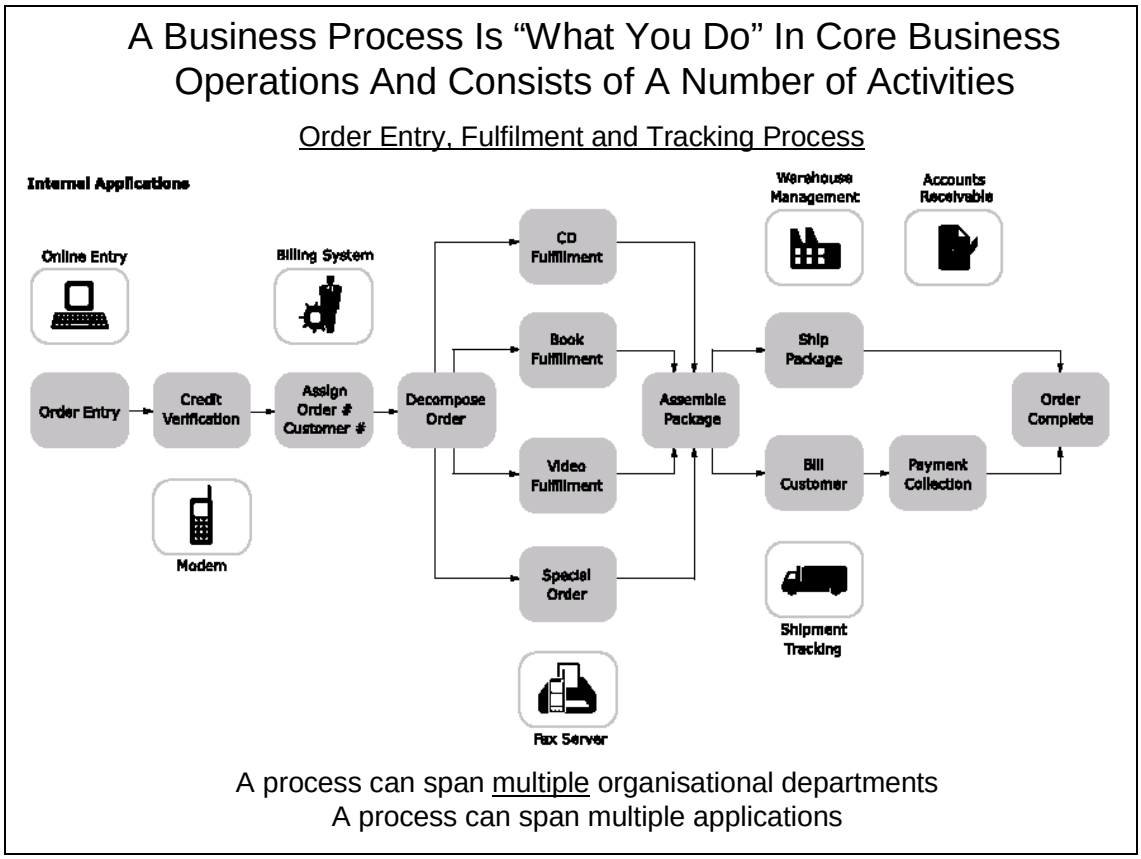


Figure 1 – Example Business Process

Note that a business process can span multiple organisational departments and multiple applications across the enterprise. So it is not enough to just understand the process. It is necessary to understand the roles of people who participate in the process and the applications they use in each activity so that we understand what BI is needed and what we have to do to integrate it into business operations. Figure 2 shows the same business process as in Figure 1 but this time with the question around what BI is needed and where in the process is it needed.

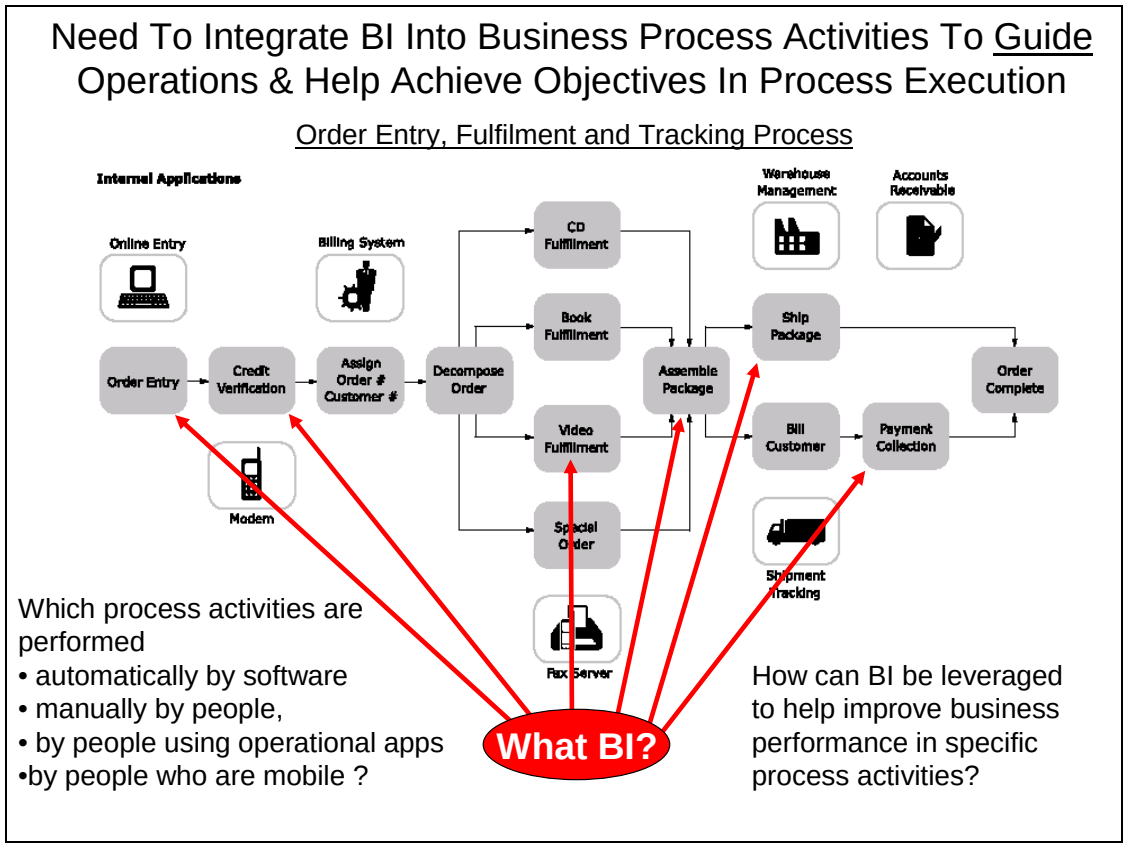


Figure 2 – Integrating BI into Business Processes

Clearly some activities in a process are performed automatically by software while others are performed manually by people. In automated activities BI can be integrated via web services for example so that a program can request BI on demand via a standard mechanism. If the activity is performed by a person, then several other things need to be understood. These include things like what is the role of the user and what applications do people normally use when performing a specific business process activity. Also is the person normally mobile such that they would need to be able to have access to intelligence from a mobile device? Figure 3 shows that it is highly likely that people in many different *roles* throughout the enterprise can all contribute in some way to achieving the same business objective. Role recognition is extremely important because it means that you are immediately faced with the realisation that integrating BI into business processes is not necessarily achieved by a single approach. It has to be done to:

- Fit with the role of the user

AND

- Deliver the right BI in the context of the specific business process activity that a user in that role is performing at that specific time.

Interviewing business users to investigate their job function and what they do is therefore a critical part of understanding what BI needs to be integrated and what the business requirements are with respect to how it must be integrated to empower people in specific roles to best leverage BI. As an

example the roles you may discover might include customer facing call centre operator, bank branch counter staff, store/branch manager, salesperson etc. These people may use different applications in their job each of which requires BI to be integrated with them.

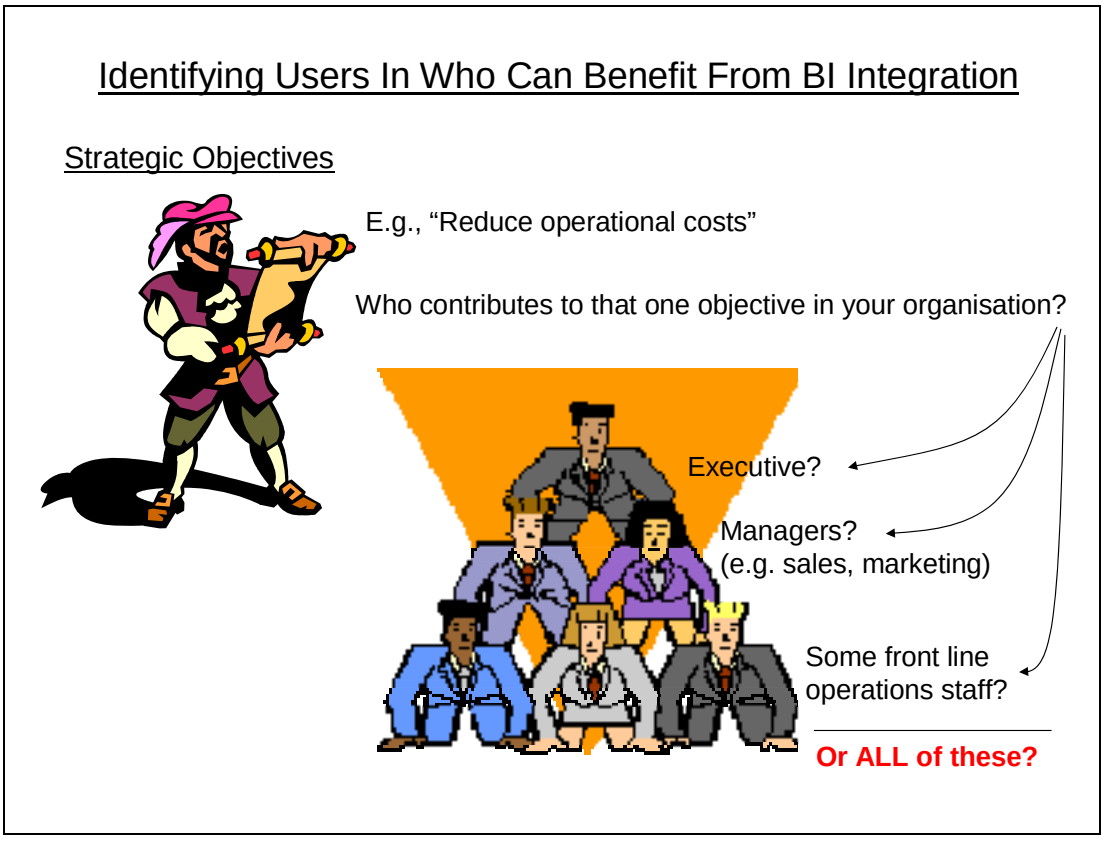


Figure 3

Given that people in multiple roles do contribute to the same objective it therefore means that detailed investigation needs to determine the following:

- What is a users' role in the business?
- What process tasks do they perform?
- What applications do they use to perform these tasks?
- During what tasks is BI needed?
- What BI do they need to help them contribute to the common objective?
- In what form do they need BI to help them contribute to the objective e.g. reports, guided analytics, instant live recommendations integrated into another application, alerts…..
- Do they have time to use a BI tool or not?

- Do they need the BI delivered on a mobile device?

- Does the use of BI systems need to be totally transparent to the user? i.e. automated analysis, automated recommendations, automated alerts etc. In other words should the user be unaware that BI systems are assisting them in their role?

- What actions does a person in this role need to take?

- Do they need to collaborate with others before taking action?

- Is the action expected to be automatic (i.e. no people)?

Answering to these kinds of questions will lead to a clear understanding of what kind of closed-loop BI integration strategy is needed to support specific users who are performing specific activities as part of a business process. It should also highlight that each role may need a different closed loop BI integration strategy. For example a customer service representative in a call centre has no time to use a BI tool and must have BI integrated into the operational application they use to guide them during dialogue with customers if they are to ever become more effective in contributing towards a strategic business objective. Equally an executive needs BI integrated into CPM software (see my previous articles on businessintelligence.com on this topic). Both require BI to be integrated in different ways to help them do their job in an intelligent business.

Identifying the correct BI integration strategy the fits the user need (e.g. call centre operators have no time to use BI tools) is therefore a critical success factor.

**Technical Requirements For BI Integration**

Over and above the investigative work defined above, the following are a non-exhaustive list of technical requirements that help integrate BI into operational systems.

- Integrated business intelligence (see my articles on Integrating CPM and BI on previous issues of www.businessintelligence.com)

- Integration between EAI and ETL technology for event driven near-real time data capture

- XML input support in the data integration platform (ETL) technology

- Remove BI technology infrastructure duplication
    - Move towards a common integrated BI development platform with CWM compliant standard metadata interchange between tools

- Web services support from BI tools and analytic applications

- Common data naming and definitions for the same data across all analytical data models and BI tool semantic layers
    - e.g. Business Objects Universes, SAS Information Maps

- Corporate performance management software to build KPI dashboards and scorecards that link lower level metrics to KPIs and objectives in the business strategy

- An automated decision engine integrated with BI to help manage and drive day-to-day business operations

Based on the above needs there are a number of ways to integrate BI into the enterprise. These include:

1. Integration of analytical applications with operational applications using an enterprise portal for access and exploitation by internal and external users
2. Embed analytics in operational applications during application development
3. Introduce Web services to dynamically integrate analytical processing with internal and partner operational applications for supporting collaborative commerce
4. Deploy real-time processing for user alerts, real-time recommendations, and automated actions

Next month we will look at these approaches in more detail and explore the strengths and weaknesses of each of them.

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