Business Analytics

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Agenda

① What is Business Analytics (BA) ?

- Is this the same story as Data Analytics ? … Data Science ?
- How does BA matter in LoBs and industries ?

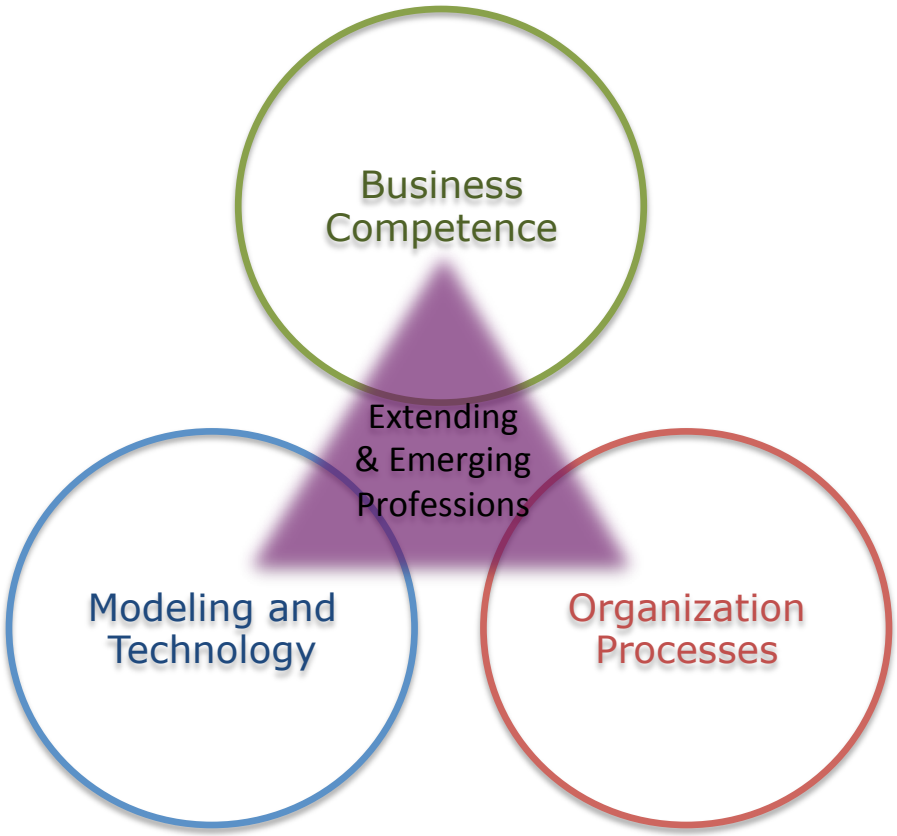
② How does BA infrastructure relate to High Performance Computing ?

③ Some of the most compelling problems in the Financial Services sector where BA can help ?

- Probably, the most interesting "FinTech" problems too …

④ What is going on in Asia Pacific in the BA domain ?

Knowledge Areas building the BA Domain



Business Competence

- Finance, accounting, marketing, supply chain, HR, channels, customer relationship …
- Industry-specific competences: underwriting, fraud, claim life-cycle, product design, traffic and transportation …

Organization Processes

- The design and transformation of work processes
  - ✓ Decision-making processes
  - ✓ Strategy processes
  - ✓ Operational processes
- How information improves and innovate processes

Modeling and Technology

- Stochastic Models, Operations Research, Cognitive Computing (and tools: R, SAS, …)
- Data generation sources (eg: Mobile messaging, GPS locator, Surveillance cameras, ATMs, etc)
- Information systems (Watson, HANA, etc)

It is not just that "*BA is applied to a Business Competence*" …
Actually, different Business Competences **build and get transformed by BA !**

CFOs step up to help create new business models

"We must make decisions that are based on facts, not feelings."

Stefano Porcellini, Group General Manager, Biesse SpA, Italy

CFOs know what's critically important and where they need to up their game. Their biggest long-standing challenge is integrating information — financial and non-financial alike — across their enterprises to help create a "single version of the truth" (see Figure 24). But CFOs are also starting to focus on broader strategic change to accelerate their organizations' performance and spur profitable growth.

CFOs in outperforming enterprises stand out in this respect. They play a key role in driving business model innovation and the restructuring — including acquisitions and divestitures — this often involves (see Figure 25). They are also more acutely aware of the need to make their organizations open and transparent (see Figure 26). This is conducive to forming alliances with a wider network of partners, something for which CFOs in outperforming enterprises are actively preparing (see Figure 27).

IBM IBV Study, 2015

ASSOCIATION FOR FINANCIAL PROFESSIONALS

AFP® GUIDE TO

How FP&A is Improving Analytics

FP&A Guide Series

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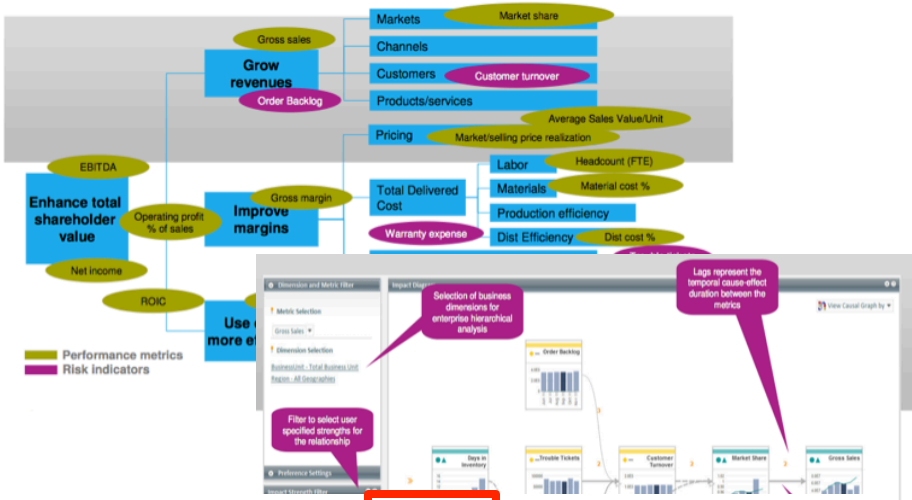
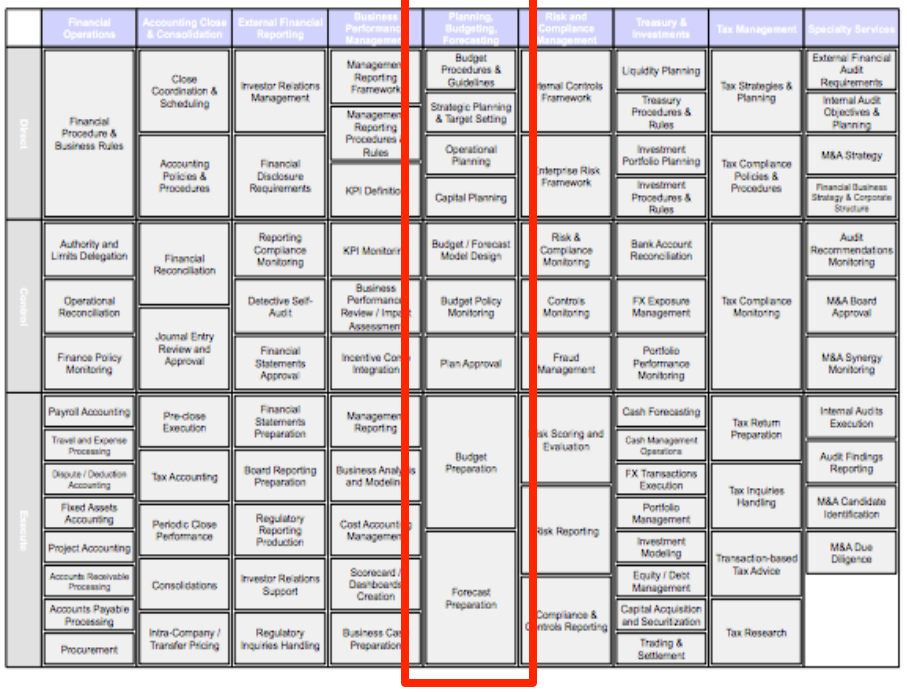
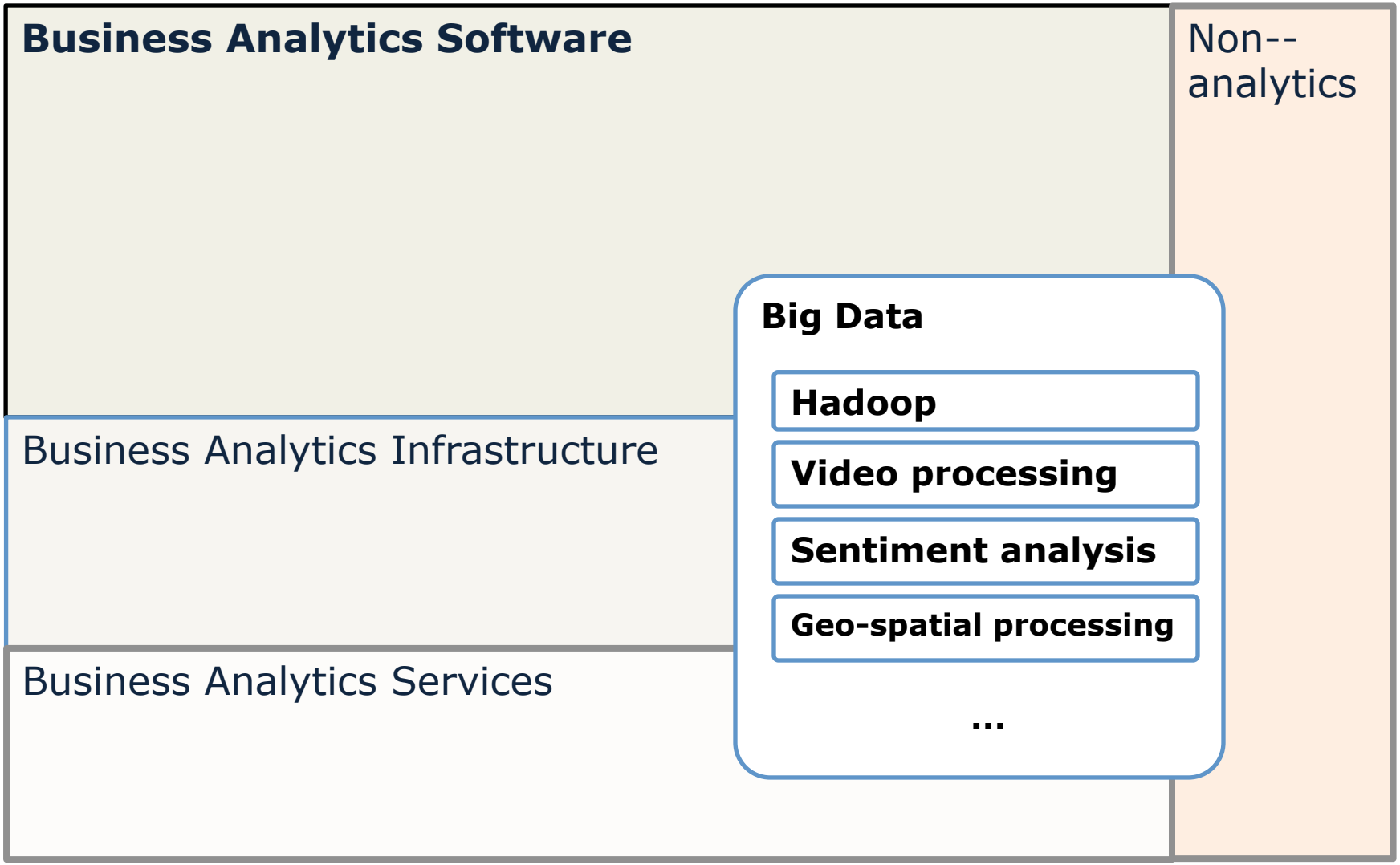




Positioning Business Analytics (BA) and Big Data (BD)



Source: IDC Big Data Taxonomy, 2014 ©

Note: This is illustrative only and does not represent the exact size of markets

Big Data Taxonomy and Definitions

IDC describes Big Data technologies as a new generation of technologies and architectures designed to economically extract value from very large volumes of a wide variety of data by enabling high velocity capture, discovery, and/or analysis. IDC associates four attributes to "data" in the Big Data definition : **Volume, Velocity, Value, Variety** :

- **Volume and Velocity :** For a Big Data project to be truly big in nature, the volume and velocity of the data set have to be big. This means that the total volume of data at rest has to be at or above a certain number of terabytes (IDC currently states this at or **above 100TB**) and/or also that the data being sampled or captured needs to have a stream or change rate that is at or above a certain number of gigabytes per second (IDC currently states this at or **above 60GBps**). With this classification, projects where data is flowing in from real-time or near-real time sources such as weather, financial transactions, behavior patterns, and so forth can also be classified as Big Data projects, in addition to the traditional data mining projects where the at-rest sampled data volume is large.

- **Value:** Big Data projects often pose an interesting dichotomy between the value of source and derived data. In more cases than not, the transient value of the source data cannot be quantified but the value of derived data has immense **business value**. Furthermore, this value has a time component tied to it (i.e : its value degenerates over time and therefore the business has to obtain tangible benefits as soon as it is generated). If the business cannot derive value from the Big Data in question, the investment is a waste of time and money.

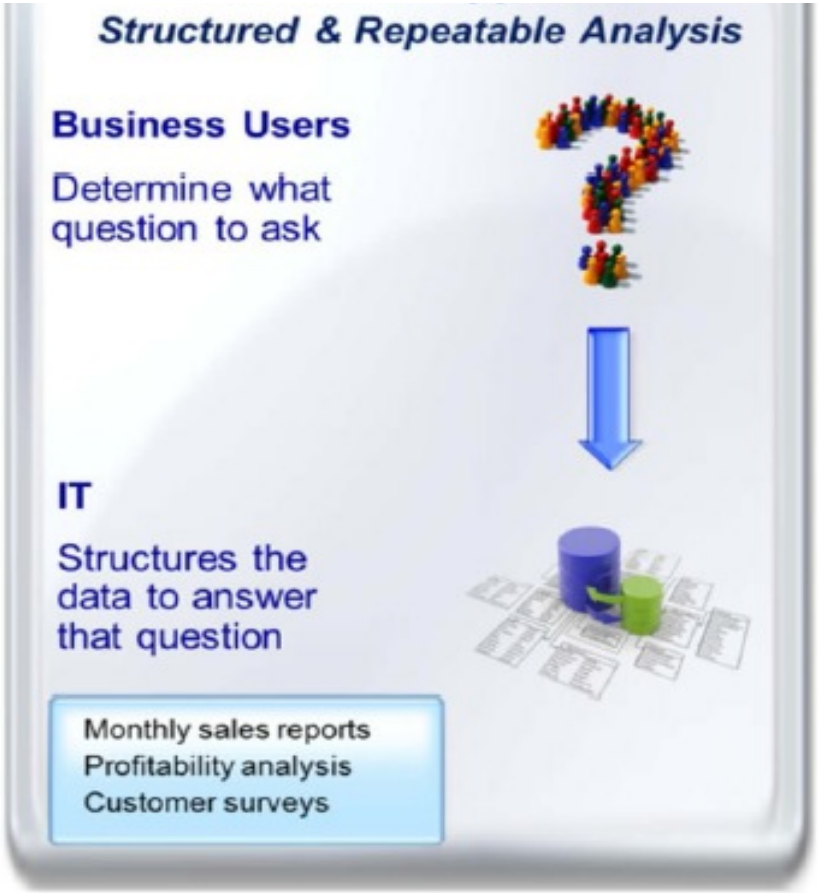
- **Variety :** A trend that is catching on in many Big Data deployments, especially those tied to analytics is that of data derivation from **multiple sources** (ie : connecting weather data and user buyer patterns or connecting financial transactions with geography for fraud detection). Data variety is therefore becoming an increasingly important component of Big Data deployments. This is not to say that analytics based on monotonous data sources do not qualify as Big Data projects. They do if they possess the volume, velocity, and value attributes.

Source: IDC Big Data Taxonomy, 2014 ©

Business Analytics Market

"Data Analytics" is usually presented as supporting the formulation of business QUESTIONS …

Traditional Approach - **Data Analytics Approach**

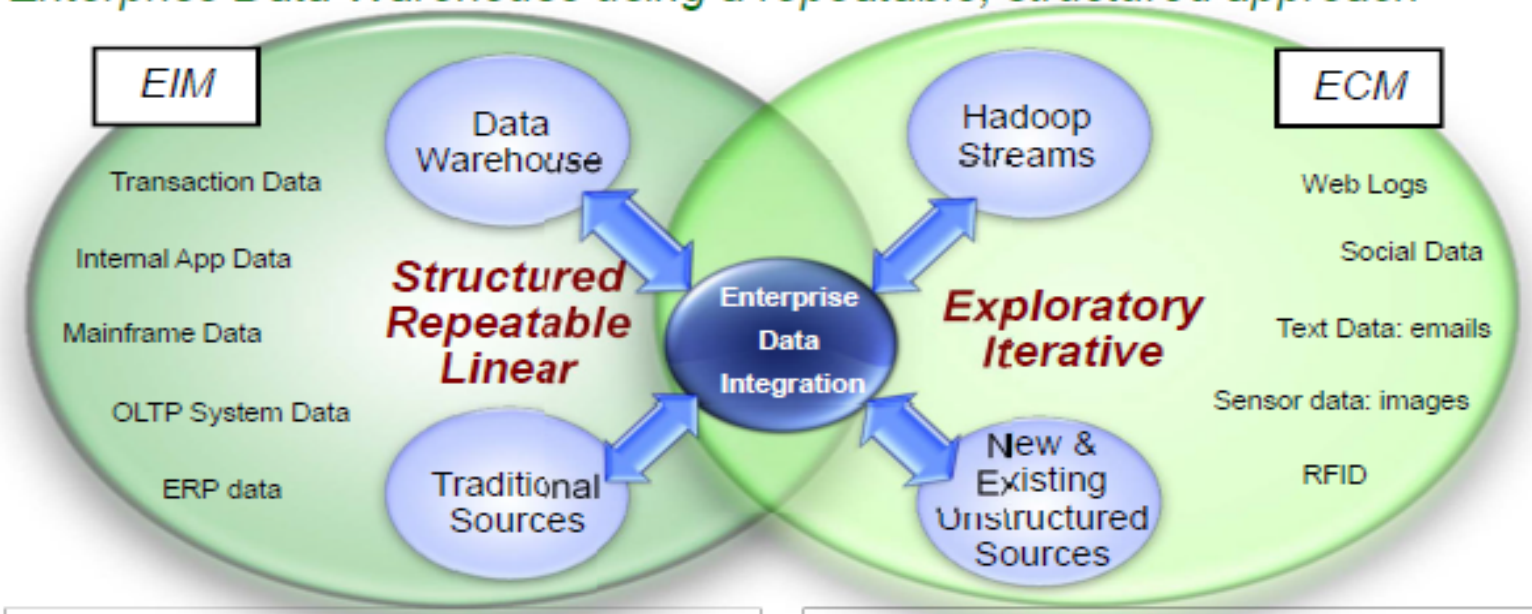


Data Analytics Approach sounds like "some insights from data" …

Then some "big magic" happens and voila ! … you operationalize the insights …

Example …

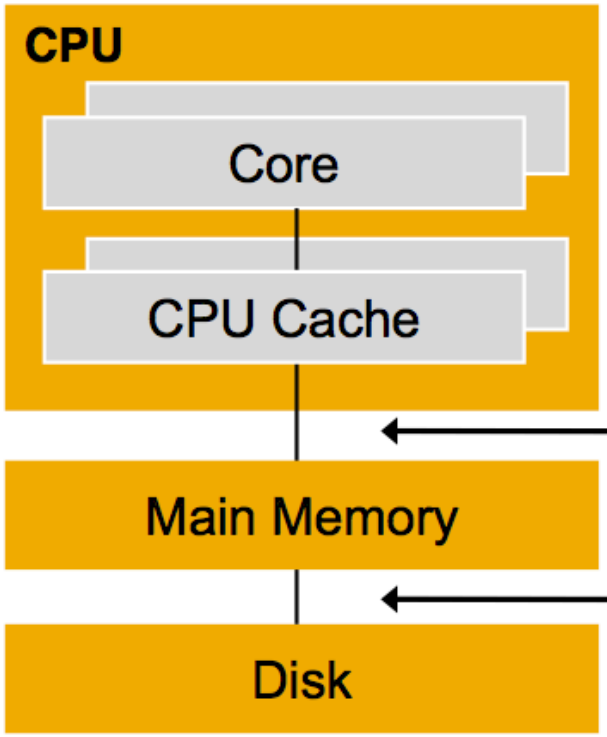
Big Data Platforms are for exploration and discovery. Once a proven, "hardened" pattern is discovered it should be "operationalized" with the Enterprise Data Warehouse using a repeatable, structured approach



- Source data is structured and transactional in nature
- Ability to provide low latency data throughput from source to consumption
- Characterized by rapid response times and concurrent workloads

- Source data is unstructured and/or machine-generated
- Data discovery mode, search for hidden patterns
- Characterized by customized, non-repeatable, complex processes
- Goal is to improve business competitiveness

Is HPC enough for Business Analytics ?

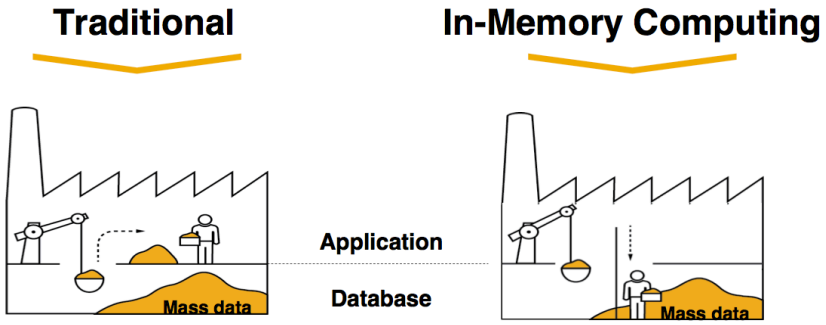


➔ Many systems today carry out data-intensive operations at the application-level …

Performance bottleneck today: CPU waiting for data to be loaded from memory into cache

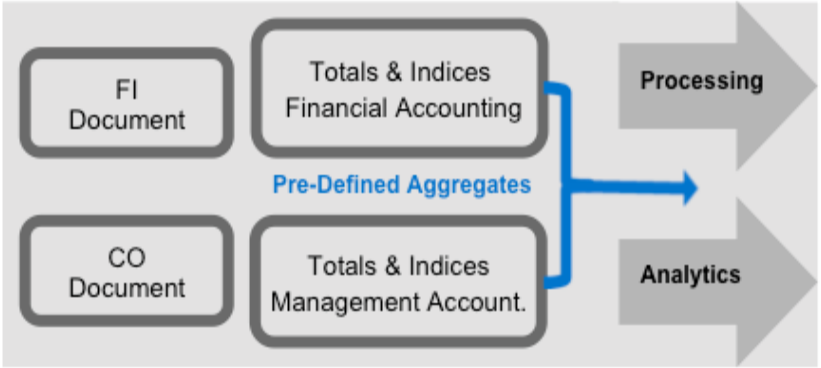
Performance bottleneck in the past: Disk I/O

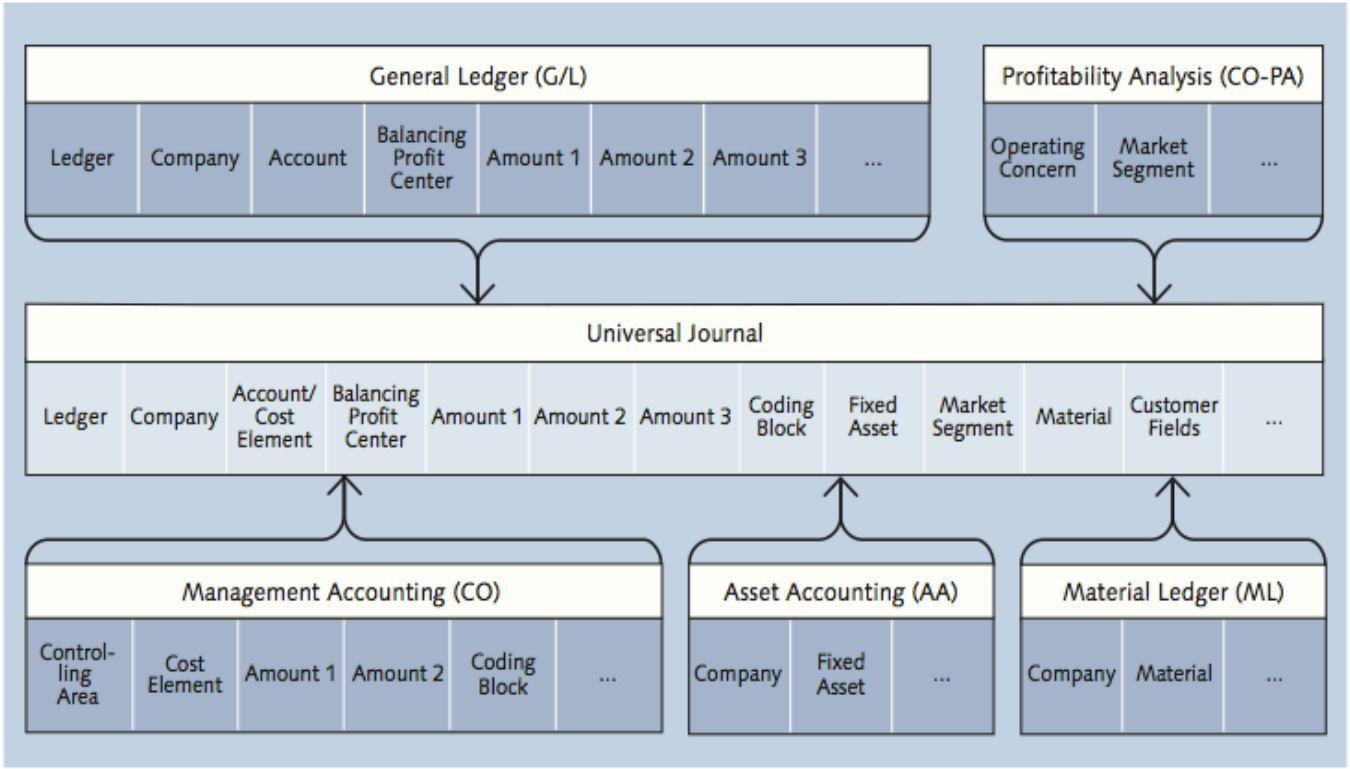
➔ **Need cache-conscious data structures and algorithms …**



In-memory leads us to a very different opportunity

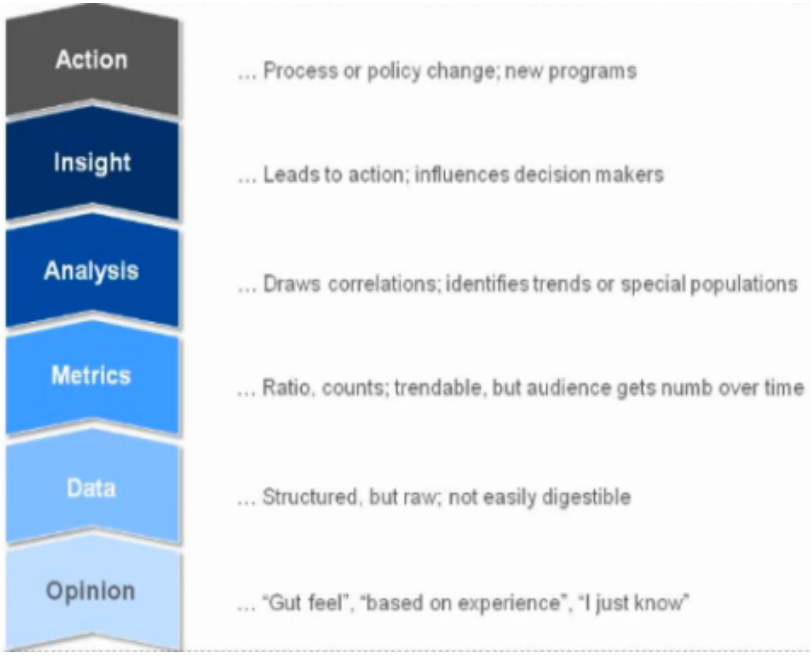
For example, the traditionally broken and redundant structures used in F&A systems …



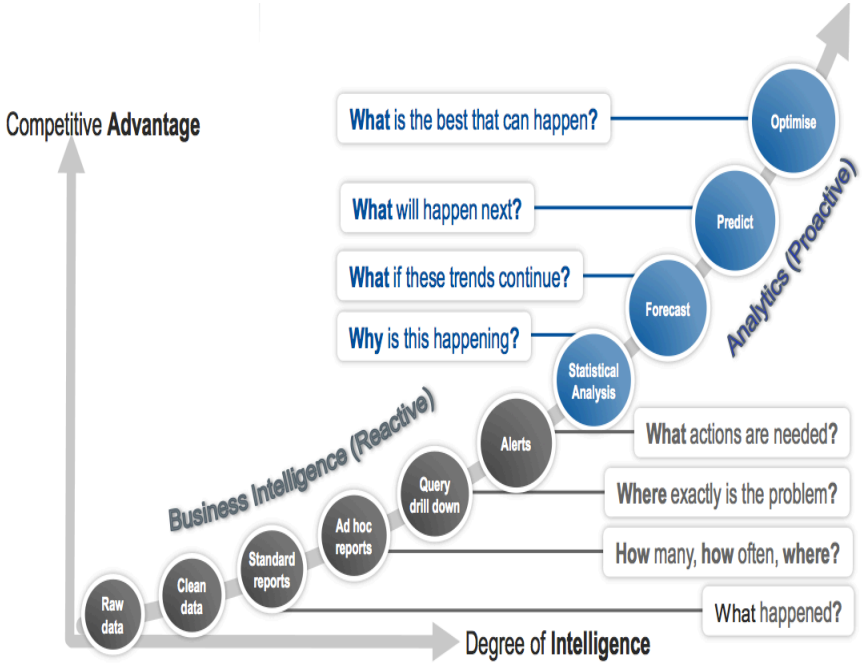


Integrate all ledgers / sub-ledgers into a single *Universal Journal* …

Business Analytics
Business Value Chain



Business Analytics
Technical Value Chain



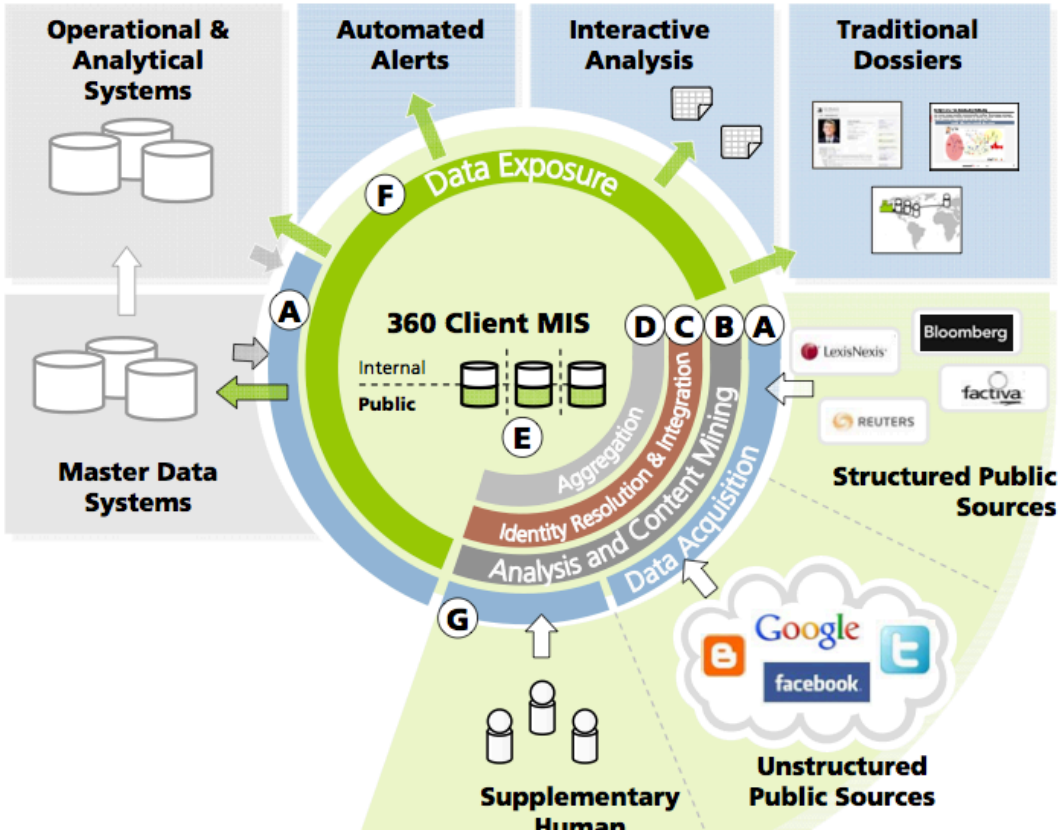
HR Business Analytics

(*) Analytics, Compensation and Communications

- Mint data and metrics, supported with precise dashboards help establish credibility …
- But the true effectiveness of analytics in HR is about an ability to change opinions and to influence
- In top enterprises, all HR decisions are based on information and analysis: compensation, talent management, hiring and all other HR issues
- *"It is unlikely that any of this is going to happen by having analytics specialists work separated from the business of HR"*
  B. Ong, Head of Workforce Planning - Google

Building the Customer-Centric Base
- KYC -

interpretation and content mining methods derive structured intelligence, which is made available for consumption in a variety of ways.



A Data Acquisition Engine
- Queries web sites such as search engines, online directories, and web logs
- Collects web content and prepares it for analysis and mining

B Analysis and Mining Engine
- Generates automated insights on all client data collected via the various channels

C Matching and Integration Engine
- Links all incoming data to the correct clients based on rules and probabilities

D Data Aggregation Engine
- Summarizes detailed insights and derives additional insights

E Central 360 Data Model
- Holds all external client data sourced through a wide array of external channels

F Data Distribution Service
- Makes static data and insights available to other applications via different methods

G Enrichment Module

Wealth Management Advisor

Challenges:

• Transform from a product centric company to relationship oriented company

• Provide highly personalized investment advise to high wealth customers

• Make Relationship Managers Trusted Advisors

Value:

• Increase the conversion rate of cash to short term investment

• Proactively reach out to customers with personalized and actionable recommendations

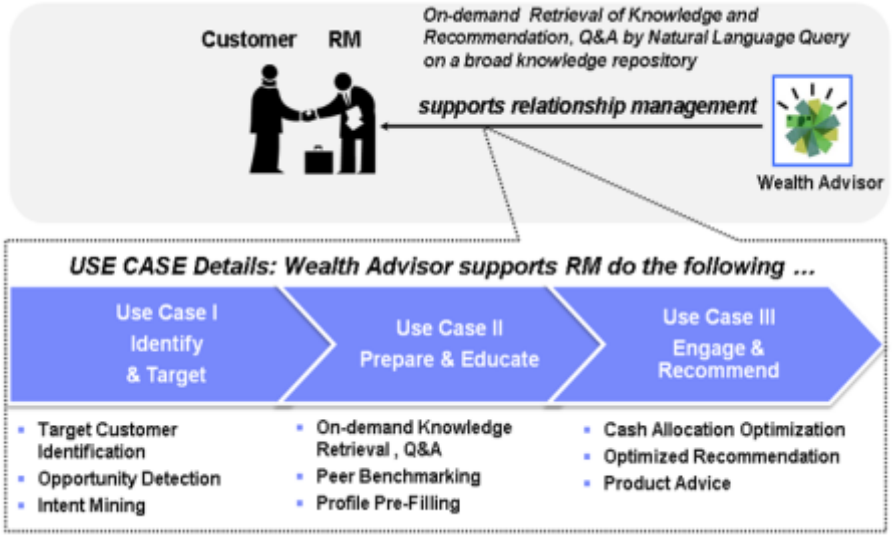
Use Case:

• Transformational solution that combines Watson Engagement Advisor with Next Best Action Analytics

• Re-balancing cash into short term investment opportunities

• WEA will provide answers to predefined questions on nightly basis, to be used in combination with Next Best Action Analytics engines to generate personalized recommendations for individual customer

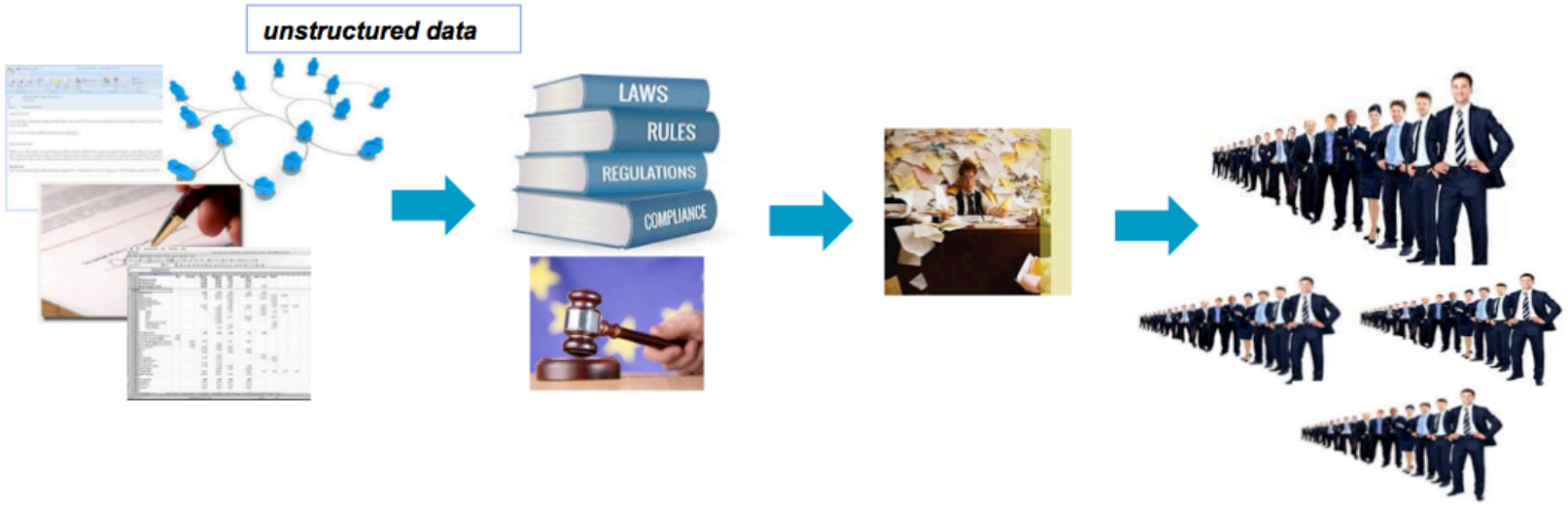
Solution Overview:



An Opportunity for global Financial Services Organizations:

Using BA to manage regulatory complexity

The unsustainable approach to hire more and more people …

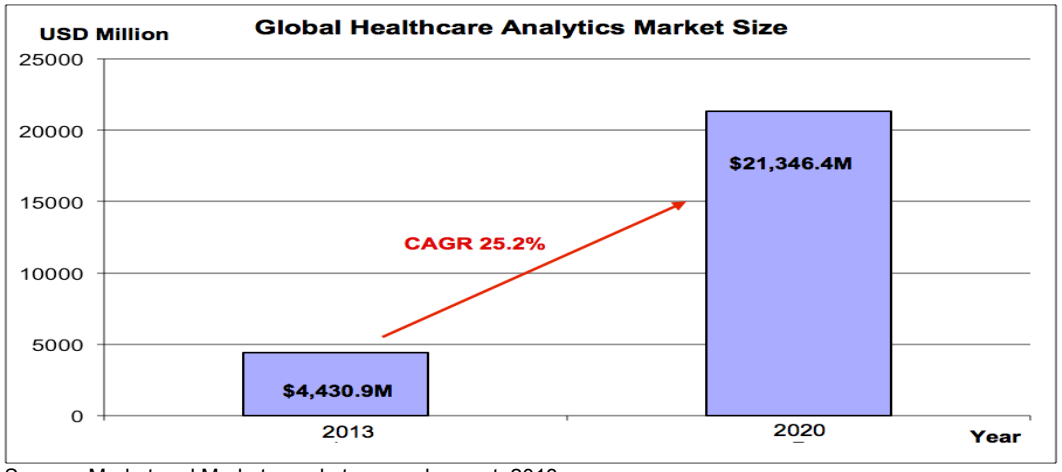


understand regulatory change | Impact Analysis | Gaps & New Procedures | Control Framework | Implication at Global Region Local Levels | New Policies Updating other Policies and Procedures | Procedure Training | Execution | Exception handling (breach) | Reporting Record Keeping

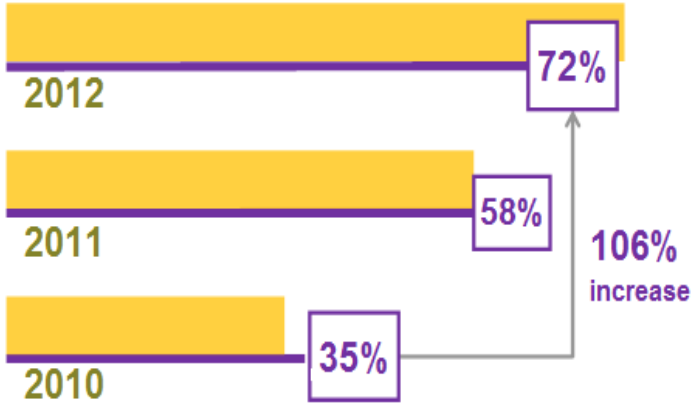
The typical compliance activity chain …

Healthcare Analytics Market Overview

- Global Healthcare Analytics Market is growing from $4.5B (2013) to $21B (2020) with CAGR of 25.2%
- More and more Healthcare and Life sciences companies realize the importance of Business Analytics
  - The percentage of respondents reporting a competitive advantage rose from 35% in 2010 to 72% in 2012, a **106% increase** in two years
- Many local and foreign healthcare companies set up new Healthcare Analytics team in Singapore to meet strong market demand
  - MOHH, IHIS, SingHealth, OPTUM, etc.

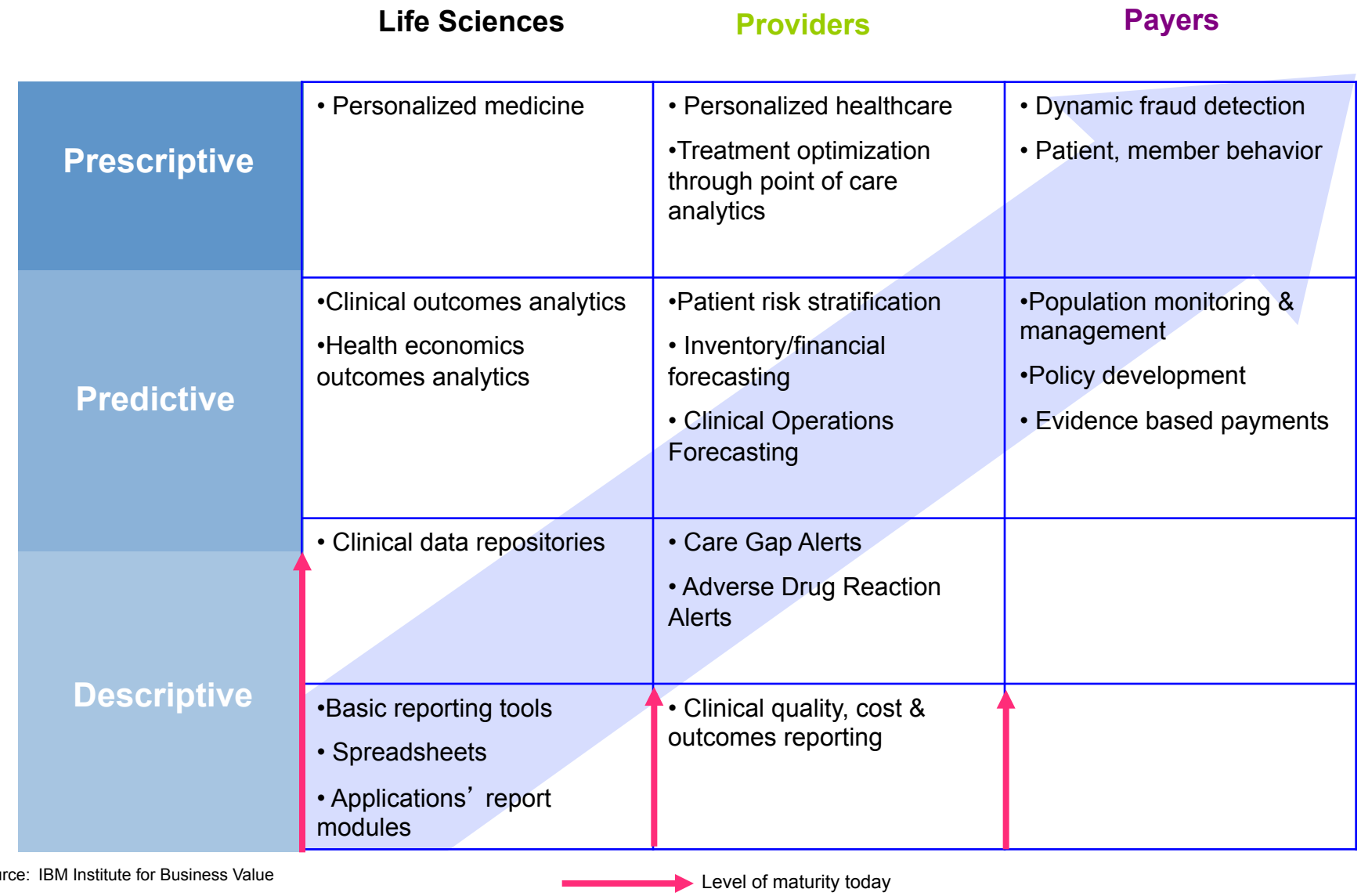


Source: Market and Markets market research report, 2013



Source: IBM Institute for Business Value

In particular, analytics is helping to drive clinical and operational improvements across the stakeholders



Source: IBM Institute for Business Value

MORE….

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