

## BUSINESS CONTEXT OF BUSINESS INTELLIGENCE (WORKSHOP LESSEN 1)



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<p>Business Context Of Business Intelligence</p> <hr/>	<p>Opening Exercise</p> <hr/> <ul style="list-style-type: none"><li>• You will work for one of these companies during the course:<ul style="list-style-type: none"><li>• Belarus Tractor (production)</li><li>• Act On Insight (IT services)</li><li>• MTS (telecom)</li></ul></li><li>• Choose your company from a raffle</li></ul>
<p>Business Intelligence Definition</p> <hr/> <ul style="list-style-type: none"><li>• Definition of BI as a process: Business Intelligence is the <i>continuous</i> process with which organisations can gather and register, analyse data in a structured manner and use the resulting information and knowledge in decision making processes to <i>improve</i> the <i>performance</i> of the organisation.</li></ul>	<p>Business Intelligence Definition</p> <hr/> <ul style="list-style-type: none"><li>• Definition of Business Intelligence as technology: Business Intelligence is the collection of IT resources that <i>supports</i> Business Intelligence as a process, makes it efficient and gives it a face.</li></ul>

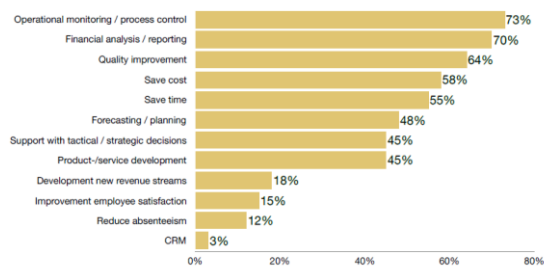
### Business Intelligence Definition

- Definition of Business Intelligence as phenomenon or discipline:  
Business Intelligence is the whole of concepts, processes, strategies, culture, structure, methods, standards and IT resources that ensure that organisations *can* behave and *develop* themselves more intelligent.

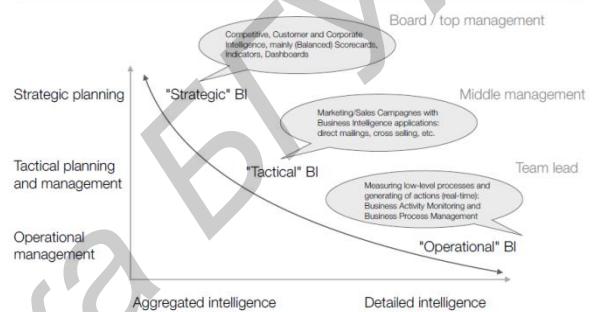
### Why Business Intelligence

- "Measuring is knowing, guessing is missing"
- Make informed decisions
- Fact-based learning
- Lower cost, increase revenue
- Stabilise or improve competitiveness
- Increase customer knowledge
- Anticipate to changes in the market
- Mandatory regulations, such as:
  - Sarbanes-Oxley Act
  - Basel I-II-III
  - IFRS

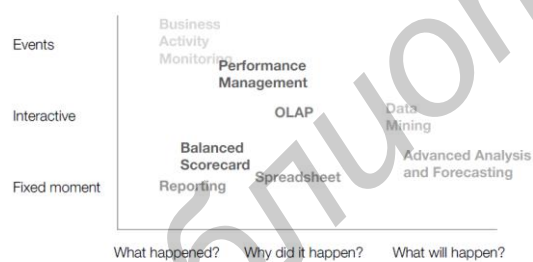
### Which goals does your organisation want to reach or support with BI?



### Three Levels of Business Intelligence



### Business Intelligence is "more than reporting"



### Disciplines of Business Intelligence

- Advanced Analytics
- Management Information
- Performance Management
- Data Discovery
- Reporting and Dashboarding
- Balanced Scorecarding
- Marketing Intelligence
- Predictive Analysis
- Data Mining
- Analytical CRM
- Business Activity Monitoring

### Business Intelligence cycle variations

- Strategical / tactical / operational level
- Frequency of use: from yearly and ad hoc to daily and real-time
- Planning: e.g. collect daily, analyse weekly and apply monthly
- Scope: from individual and department to company and chain
- Explicitness
- Area of use

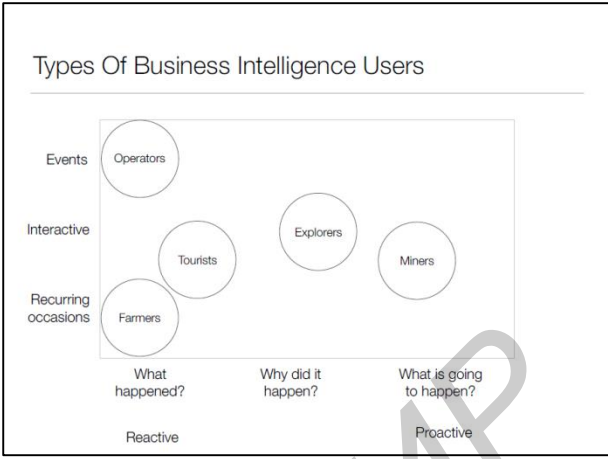
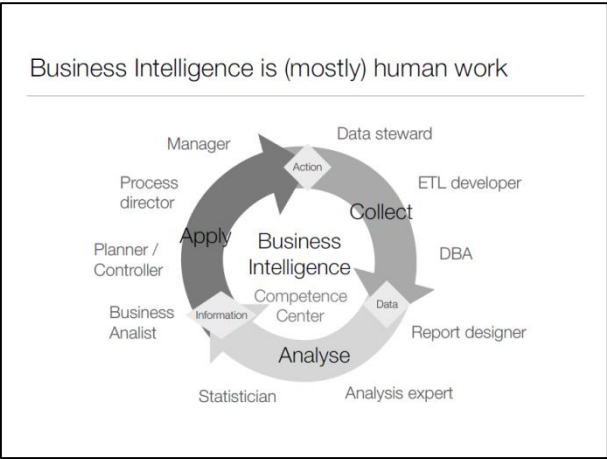
### Data Warehousing



Business Intelligence



Data Warehousing



#### User Type: Farmers - Clear Sighted

- Monitor the effect of decisions on the business by tracking key performance metrics and analysing business reports
- Provide Explorers/Miners with feedback on the effectiveness of their predictions

#### User Type: Farmers - Clear Sighted

- Have a fairly predictable pattern of usage
- They know what data they want, how they want it displayed, when they want it and in what media
- See the world in terms of dimensions (time, product, geography) and metrics (usage, counts, revenue, costs)

#### User Type: Farmers - Clear Sighted

- Farmers mainly use multidimensional data marts
- Examples of farmers:
  - Sales Analysts
  - Financial Analysts
  - Market Campaign Managers
  - Accounting Analysts

#### User Type: Explorers - Innovative

- Work to understand what makes the business work by looking for hidden meanings in corporate data
- Have little or no idea what to expect from query execution
  - An out of the box thinker
  - Launches large and often unpredictable queries
  - Often receives no results back
  - Occasionally receives incredible insight

#### User Type: Explorers - Innovative

- Strive to predict the future based on past results
- Very knowledgeable about data content within and outside of the business
- Demonstrate an unpredictable pattern of usage
- Sees the world in terms of data and data relationships

#### User Type: Explorers - Innovative

- Explorers may start with multidimensional data marts but often require their own environment
- Examples of explorers:
  - Insurance Actuaries
  - Process Control Engineers
  - Market Research Analysts

<p>User Type: Miners - Thorough</p> <hr/> <ul style="list-style-type: none"><li>• Scan large amounts of detailed data looking for confirmation of a hypothesis or for suspected patterns</li><li>• Have a pretty good idea what to expect prior to query execution</li><li>• Operate on a base of data that is preconditioned for analysis</li></ul>	<p>User Type: Miners - Thorough</p> <hr/> <ul style="list-style-type: none"><li>• Demonstrate a reasonably predictable pattern of usage</li><li>• Interested in finding meaningful relationships in transactions</li></ul>
<p>User Type: Miners - Thorough</p> <hr/> <ul style="list-style-type: none"><li>• Miners may start with multidimensional data marts but often require their own environment</li><li>• Examples of Miners:<ul style="list-style-type: none"><li>• Expert Marketers</li><li>• Risk Controllers</li><li>• Logistic Specialists</li><li>• Statisticians</li></ul></li></ul>	<p>User Type: Tourists - Generalists</p> <hr/> <ul style="list-style-type: none"><li>• Have a broad business perspective and are aware of the data produced by the business</li><li>• Use the data warehouse frequently</li><li>• Cover a breadth of material quickly but in little depth<ul style="list-style-type: none"><li>• Are accustomed to a consistent graphical user interface</li><li>• Need ability to search large banks of data without a lot of typing</li></ul></li><li>• Demonstrate unpredictable patterns of usage</li></ul>
<p>User Type: Tourists - Generalists</p> <hr/> <ul style="list-style-type: none"><li>• Tourists mainly use multidimensional data marts and/or informal warehouses</li><li>• Examples of Tourists:<ul style="list-style-type: none"><li>• Executives</li><li>• Managers</li><li>• Casual users</li></ul></li></ul>	<p>User Type: Operators - Focused</p> <hr/> <ul style="list-style-type: none"><li>• Use the intelligence derived by Explorers and Farmers to improve business conditions</li><li>• Provide increasing pressure on the Corporate Information Factory in terms of availability, data freshness and query performance<ul style="list-style-type: none"><li>• Need fresh, detailed, day-to-day information</li><li>• Expect transactional performance and response times</li></ul></li></ul>
<p>User Type: Operators - Focused</p> <hr/> <ul style="list-style-type: none"><li>• Have a fairly predictable pattern of usage</li><li>• See the world in terms of process</li></ul>	<p>User Type: Operators - Focused</p> <hr/> <ul style="list-style-type: none"><li>• Operators mainly use the operational data store and sometimes multidimensional data marts</li><li>• Examples of Operators:<ul style="list-style-type: none"><li>• Customer Support Representatives</li><li>• Manufacturing Line Managers</li><li>• Inventory Control Managers</li></ul></li></ul>

### User Types Exercise

- Identify two departments in your company
- Name one role in each of the departments
- Say for each role what user type it is
- Name a typical type of BI application for each role

### Business Intelligence Maturity Scan

### Business Intelligence Maturity Matrix

BIMM	Local	Coordinated	Integral	Intelligent
<b>BI Architecture</b>	<ul style="list-style-type: none"> <li>- Independent Data Marts</li> <li>- Large tool variation</li> <li>- Missing standards</li> <li>- Limited attention to Data Quality</li> <li>- Reporting / limited OLAP</li> </ul>	<ul style="list-style-type: none"> <li>- Convergence of Data Warehouse and Data Marts</li> <li>- Standardisation of tools</li> <li>- BI portals</li> <li>- Exchange technical metadata</li> <li>- OLAP servers</li> </ul>	<ul style="list-style-type: none"> <li>- Hub and spoke / federated</li> <li>- Standardisation of methods</li> <li>- Data cleaning</li> <li>- Common metadata</li> <li>- Visualisation, notification, collaboration</li> <li>- Common BI framework</li> </ul>	<ul style="list-style-type: none"> <li>- Enterprise Information Integration / Data Bus</li> <li>- Continuous improvement of work processes</li> <li>- BI web services</li> <li>- Collaboration</li> <li>- Real-time closed loop</li> <li>- Total Data Quality Management</li> </ul>
<b>BI Organisation</b>	<ul style="list-style-type: none"> <li>- Various project teams mainly IT staffed</li> <li>- Local customers</li> <li>- Ad hoc development and management</li> </ul>	<ul style="list-style-type: none"> <li>- Shared project office</li> <li>- Program management</li> <li>- Management by IT department</li> <li>- Professionalisation</li> </ul>	<ul style="list-style-type: none"> <li>- BI Competence Center</li> <li>- Reuse and reusable quality</li> <li>- BI Governance</li> <li>- Management by CIO</li> </ul>	<ul style="list-style-type: none"> <li>- Shared Service Center</li> <li>- BI fully part of business management and operations</li> <li>- BI is a board issue</li> </ul>
<b>BI Ambition</b>	<ul style="list-style-type: none"> <li>- Understand Department level</li> <li>- Accountability afterwards</li> </ul>	<ul style="list-style-type: none"> <li>- Improve</li> <li>- Limited consolidation</li> <li>- Adjust timely</li> </ul>	<ul style="list-style-type: none"> <li>- Optimise</li> <li>- Integral company policy</li> <li>- Proactively application of information</li> </ul>	<ul style="list-style-type: none"> <li>- Innovate</li> <li>- BI also for external partners and customers</li> <li>- Intelligent organisation</li> </ul>

### BI Maturity Scan Business Questions

- How do you see the organisation?
- What are your priorities at the moment?
- How do you know it is going well?
- What are your business worries?
- How do you measure success?
- How often do you check your most important measures?
- Which applications does your department use and what do you think about them?

### BI Maturity Scan Technical Questions

- Which Business Intelligence and Data Warehouse related hardware and software is in use?
- How, when and why is chosen for this setup?
- How are changes to the system chosen and applied?
- How do you receive requests to supply information or make it available for consumption?
- What is available in standards and documentation?
- Which issues are there in relation to the system?

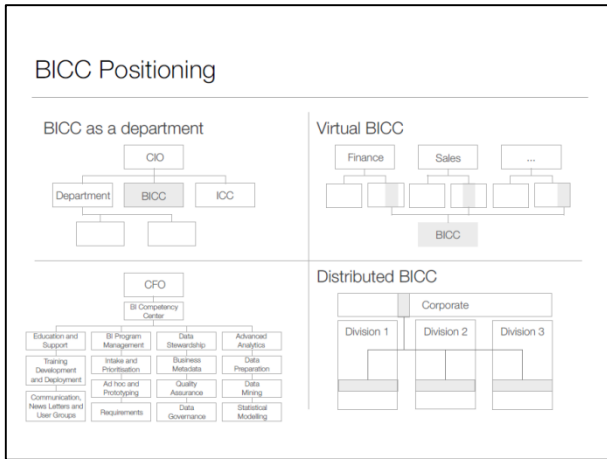
### Business Intelligence Maturity Scan Exercise

- Choose 4-7 key people from your company to interview
  - State their department and role
- Answer the top five questions of each subject area briefly from your company key people
- Draw your basic maturity matrix by writing the main factor in the appropriate block for each subject area

### Business Intelligence Competency Centre

### Business Intelligence Competency Centre

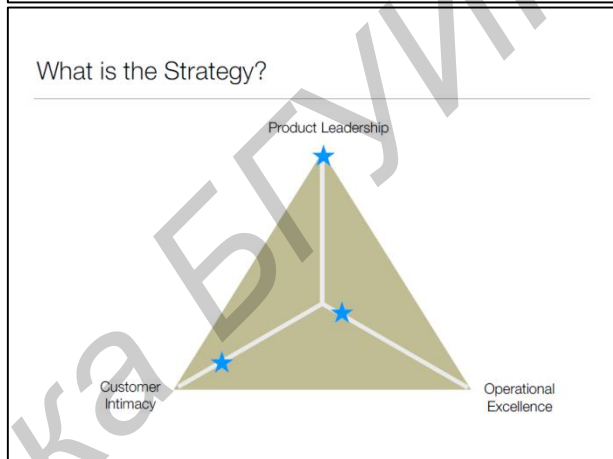
- A business Intelligence Competency Centre (BICC) is a permanent formal organisational structure. It includes representatives from the business and IT. Its aim is to advance and promote the effective use of Business Intelligence to support the organisation's business strategy.
- BI CC targets:
  - Ensure and share business, IT and analytical knowledge
  - Actively support BI projects
  - 'Educate' and advise management
  - Broad communication about use and necessity of BI
  - Actively develop BI knowledge
  - Recognise the importance of BI architecture
  - Have the IT department deal with the diversity of BI technologies



### Which BICC structure to choose?

- Depends on:
  - Type of decisions
  - Available resources
  - Organisational structure
  - Organisation culture
- The following questions can help:
  - Which type plans and decisions does the intelligence have to found (marketing, financial, production, strategic plans)?
  - Which relevant resources are available and where (sources, experts, analysts)?
  - What is the relationship between the business units (same markets, departments, competitors, clients, information needs, means)?
  - Is the organisation centralised or decentralised?

### Key Performance Indicators

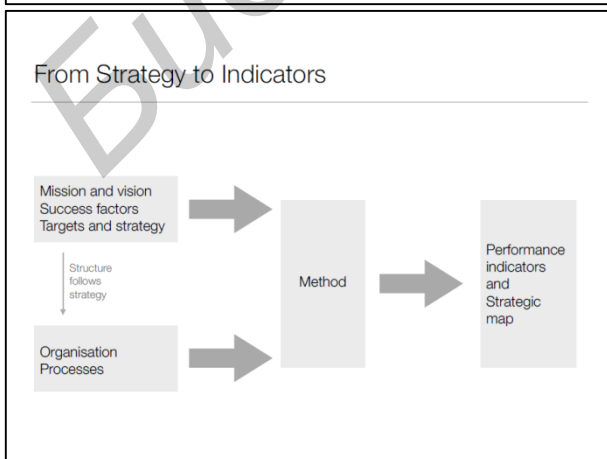


### Strategy and Indicators

- Organisations use scorecards to visualise results
- A scorecard is a set of indicators grouped in perspectives
- An indicator is a number or a graph that shows the results in a certain area

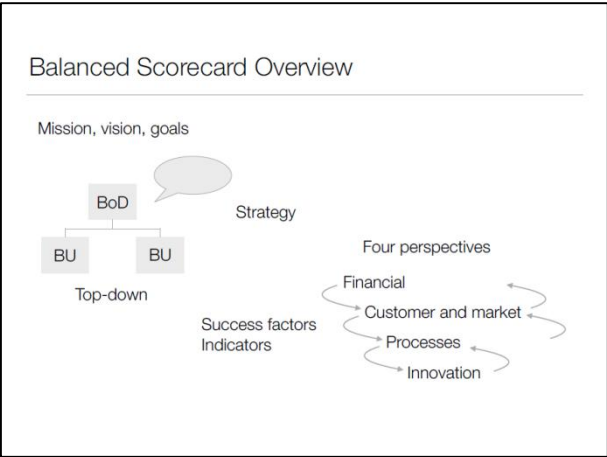
### Advantages of Managing With Indicators

- Indicators...
  - offer a compact representation of essential information
  - are easily interpreted through visual representation
  - give focus: aim attention to essentials
  - show performance at a glance
  - can be delivered fast
  - are flexible in design
  - give insight in trend and expected developments
  - together are more than the sum of their parts

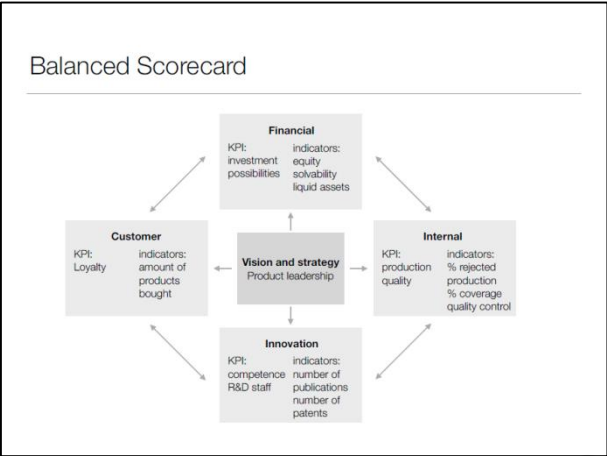


### Four Different Approaches to Formulate Indicators

- Balanced Scorecard
- Process and Integral Chain Approach
- Horizontal Approach
- Vertical Approach



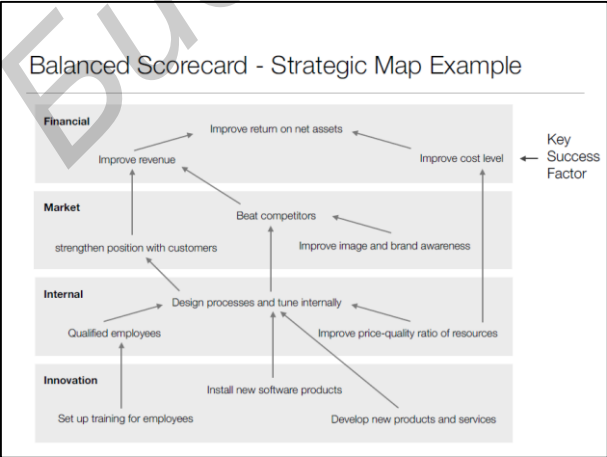
- ### Balanced Scorecard
- Four perspectives:
    - Financial: how do shareholders and other investors see us?
    - Customers: how do (potential) customers see us?
    - Internal: What must we excel at? How do our processes perform?
    - Innovation: How can we continue to improve, create value and innovate?



- ### Balanced Scorecard
- (Strategic) objective
    - Key Performance Indicators
      - Indicators
  - Limit your KPI's!
  - Typical is one or two KPI's per subject area

- ### Value of the Balanced Scorecard
- Vision of Top management
  - Key performance indicators
  - Gives a balanced set of indicators
  - Focus on continuity and controlled change
  - Stimulates full control
  - Suitable for professionalising of management
  - Makes strategy explicit and communicable

- ### Success Factors and Causalities
- Key Success Factors are...
    - those factors that determine the success of the unit, ultimately leading to the economical performance of that unit
    - the aspects that are crucial to realising the strategy
    - the core priorities for managing quality and productivity
  - Causalities show the dependencies between Key Success Factors



- ### Balanced Scorecard - Indicators Example
- Strengthen position with customers
    - % new revenue with existing customers
    - Profit margin per customer
    - Revenue with new customers
  - Average lead time
  - Effort ratio to hours
  - Improve image and brand awareness
    - Spontaneous brand recognition
    - Helped brand recognition

### Master Card for an Indicator

Master Card	Activity Ratio to Hours	
General	Nr	823
	Definition	Size new revenue / number of hours sales activity
	Type	€ 0
	Owner	Director Marketing and Sales
	Perspective	Internal
	Direction	Increasing
	Norm	t.b.d.
	Bandwidth	t.b.d.
	Norm setter	Director Marketing and Sales
	Report frequency	Monthly
Measurement	Supplier	Department MI administration
	Source systems	Sales system and time sheets
Known issues		Time sheets of sales representatives lags 2 weeks

### Characteristics of a Good Indicator

- The indicator shows at a glance the situation of a certain aspect of the organisation or other relevant matters
- Developments in time are visible to make clear if there is a positive, negative or flat trend
- An indicator is aimed on priorities, to ensure as little attention as possible is spent on side issues
- The indicator has a norm to make clear which conditions call for unchanged ('green'), preventive ('orange') or corrective ('red') measures. The norms are ideally derived from the strategic organisation objectives
- The meaning of an indicator is clear, with only one interpretation and version of the truth. When for instance a manager and internal accountant disagree about the meaning of an indicator, this dispute has to be solved. This may lead to two indicators with a clearly distinguishable name and definition

### Variation of and Alternative for Balanced Scorecard

- Internet Scorecard
  - For organisations working primarily online, or for monitoring the online channel
  - Dimensions:
    - Financial
    - Visitor
    - Website (including infrastructure)
    - Organisation
- Triple Bottom Line
  - [https://en.wikipedia.org/wiki/Triple\\_bottom\\_line](https://en.wikipedia.org/wiki/Triple_bottom_line)
    - People
    - Planet
    - Profit
  - Circles of Sustainability
    - [https://en.wikipedia.org/wiki/Circles\\_of\\_Sustainability](https://en.wikipedia.org/wiki/Circles_of_Sustainability)
      - Economics
      - Ecology
      - Politics
      - Culture

### Key Performance Indicators Exercise

- Describe one KPI in one subject area for your company
- Describe three to five indicators related to this KPI