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Data Validation as a Main Function of Business Intelligence

presented by

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3 Levels of BI



- **Validation of input data**
- **Transformation**
- **Making output data available**



Definition of BI



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Business Intelligence (BI) is a non-exclusive collection of methods that are used as a transformation process to generate information out of data.



Requirements of BI



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- **Minimum of information quality**
- **Benefit by using BI**
- **We need to know what we know**

Structure of BI



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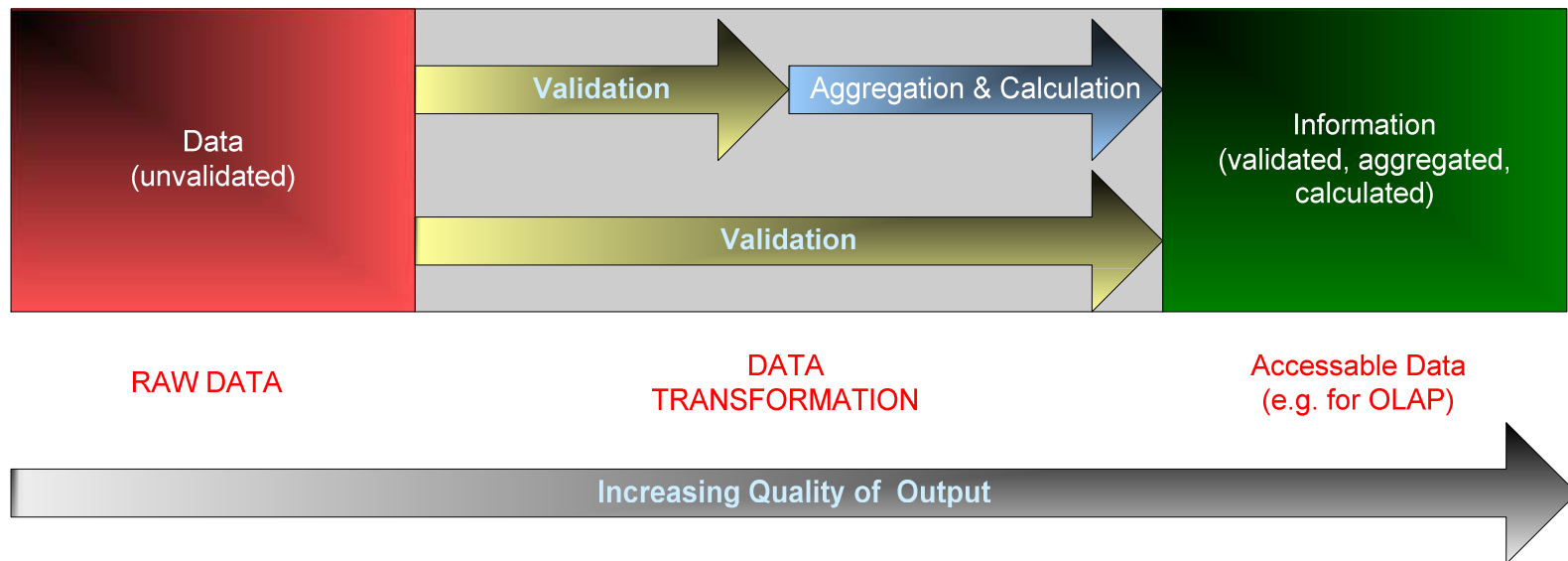


Figure 1: Abstraction of the Transformation Process Inside a BI-System



Problems of Raw Data



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- **Typographical errors**
- **Transposed digits**
- **Multiple data capture / redundancy**
- **Incomplete data sets**
- **Missing data sets**



Data Validation



- **Range of security**
- **Check wether**
 - **the amount of data sets is complete**
 - **each data set is complete**
 - **there are abnormalities**
 - **there are trends (e.g. a accumulation of serious misentrys)**
 - **there are misentry / key errors**
 - **there are general data errors**
 - **the data is plausible / makes sense**



Operational BI



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- **BI is not limited to strategic analysis**
- **Usable as a tool for TQM**
- **Detects problems before they become a problem**



Quality Control Chart (QCC)



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- **Preventing errors**
- **Warning threshold**
- **Alarm threshold**
- **Finding trends**

Identifying Data Problems



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instantOLAP clinic-BI V-2.0

lenhard | New Report | Bookmark | Automation | Log | Change Password | Workbench | logout

Navigator Material / Drugs

Run Stop Edit Save Save as ... Print Hide Selector Redo Designer Export

Date: 2012, 03.2012, TUE 13.03.2012

Insert Article: All

Commodity Group: 660000 - Drugs

Kostenstelle: All, Intensive Care Unit (ICU)

Case Status: All, incl. Case#, excl. Case#

	Date	Order#	C#	Cost Centre	Group#	Group Name	Art#	Article Name	Total Amount	Unit Price	Count	Unit
1	13.03.2012	3305230		ICU	660000	Drugs	3331074	HXXXXXXXXXXXXX 1g 1 Fl.	1.428,00	357,00	4,00	Pcs.
2	13.03.2012	3305169		ICU	660000	Drugs	3331074	HXXXXXXXXXXXXX 1g 1 Fl.	1.071,00	357,00	3,00	Pcs.

Missing Assignment

Figure 2: Operational BI in a Clinical BI-System (instantOLAP) [Len2012]



Importation of Validation



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**The Quality of output
of any data transformation process
depends directly on the quality
of input data**



Conclusion



- **Making decisions requires data or information on a sufficient level of quality**
- **It is necessary to validate raw data before computing any results**
- **Data validation can be the main intention of a transformation process**
- **Validation might be a part of transformation**
- **Validation can be the transformation process**



Conclusion



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**In any case, data validation is
proved to be a main function of
Business Intelligence**



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