

# Indicators and Quality: A Short SUSANA History

# Early on “Quality” Became a Focus...

- One interpretation of the failure of the 1970’s social indicator movement was the detachment of its leaders from users
  - Quality being defined without users in mind
- Vision that the internet will supply near infinite amounts of information
  - Sources of information that have transparent and valued quality frameworks will have an advantage

# The Perceived Importance of Transparency and Inclusiveness

- The indicator selection process must be a widely-inclusive one, to avoid the problems of the social indicator movement
- The quality criteria must be deliberately chosen and made explicit
- Early GAO work investigated alternative quality frameworks

# United Nations' Educational, Scientific and Cultural Organization

**Definition of Quality:** “The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.” (ISO 8402)  
**Data Quality Attributes:** and “fitness of use”

Validity

Reliability

Relevance to policy

Potential for disaggregating

Currency

Punctuality

Coherence across different sources

Clarity and Transparency with respect to known limitations

Accessibility and Affordability

Comparability through adherence to internationally agreed standards

Consistency over time and space

Efficiency in the use of resources

Denise Levesley, Director, UNESCO Institute for Statistics, Montreal Canada, “The Challenge of Improving the Quality of Internationally Comparable Data.”

# Statistics Canada

## Quality Assurance Framework

**Definition of Quality:** “Fit for use”

### **Data Quality Attributes:**

**Relevance:** The degree to which it meets the real needs of clients.

**Accuracy:** The degree to which the information correctly describes the phenomena it was designed to measure.

**Timeliness:** The delay between the reference point (or the end of the reference period) to which the information pertains, and the date on which the information becomes available.

**Accessibility:** The ease with which it can be obtained from the Agency.

**Interpretability:** The availability of the supplementary information and metadata necessary to interpret and utilize it appropriately.

**Coherence:** The degree to which it can be successfully brought together with other statistical information within a broad analytic framework and over time.

# Australian Bureau of Statistics

## Quality Measures for Systems of Economic Accounts (QMSEA)

**Definition of Quality:** “fit for purpose”

### Data Quality Attributes:

<b>Accessibility:</b>	Relates to data and information dissemination matters.
<b>Accuracy:</b>	Proximity of an estimate to the ideal or true, but unknown value of that component.
<b>Compliance:</b>	Degree or extent to which the principles or objectives of the methodology in question, are upheld.
<b>Consistency:</b>	The conceptual integrity of the SEA or its transforming methodologies.
<b>Continuity:</b>	Time sequence series allow meaningful comparisons based on consistency.
<b>Frequency:</b>	Periodicity of the SEA's data reference period.
<b>Longevity:</b>	Extent of sufficient time series observations to undertake meaningful analysis of a historic nature.
<b>Lucidity:</b>	How well are users serviced by the information and assisted in interpretation and analysis.
<b>Relevance:</b>	Ability of information...to satisfy contemporary and likely future needs...both nationally and internationally.
<b>Revisability:</b>	Revision characteristics which a [variable] displays over time.
<b>Sense:</b>	Degree to which data behaves coherently with other indicators.
<b>Timeliness:</b>	The extent to which the time value of the information is preserved.

Reference: "Quality Measures for Systems of Economic Accounts." Analytical Services Branch ABS

# Statistics Finland

## Quality Guidelines

**Definition of Quality:** “fit for purpose”

### **Data Quality Attributes:**

- Relevance:** Data should meet customer needs.
- Accuracy:** Data should measure correctly and reliably what they are supposed to measure.
- Timeliness and Promptness:** Data should be recent and published at the time agreed.
- Accessibility and Transparency:** Data is easily accessible to users, suits users purposes and sufficiently documented.
- Comparability:** Comparability of the data over time and with other domestic and international statistics.
- Coherence and Consistency:** Sets of statistics must be logically consistent and coherent with each other.
- Documentation:** Description of activities in the statistical survey process.
- Costs:** Costs to statistical organization, data supplier, and costs and/or benefits to the data user.

# Statistics Netherlands

## Code of Practice

### Principles:

Impartiality

Reliability

Relevance

Cost Effectiveness

Statistical  
Confidentiality

Transparency

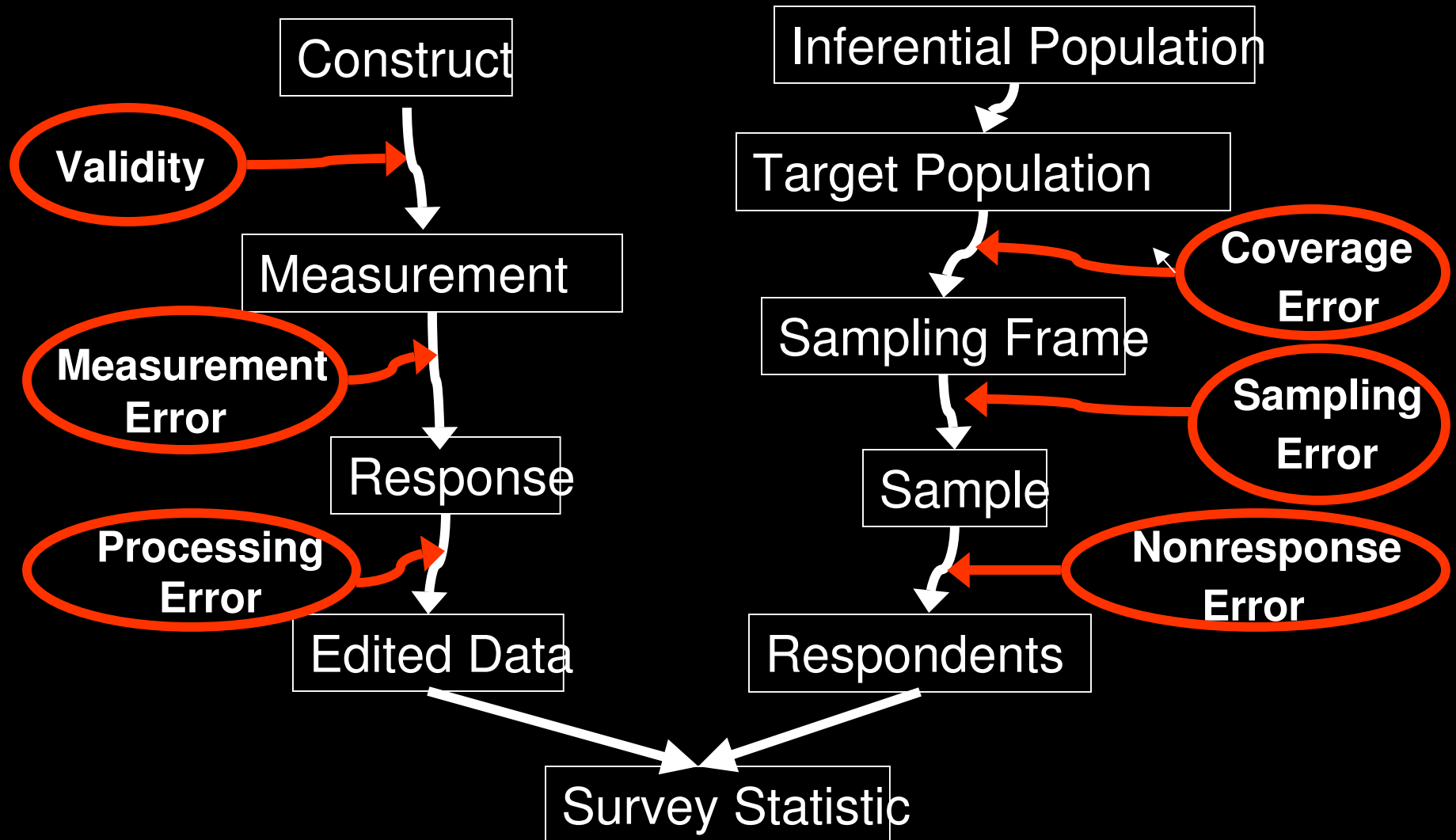
**Each principle is defined separately for each group of stakeholders - Society, Users, Respondents, and the Statistics Netherlands' staff**

Reference: Statistics Netherlands, January 2004, "Code of Practice"

# Total Survey Error Perspective for Survey Estimates

Measurement

Representation

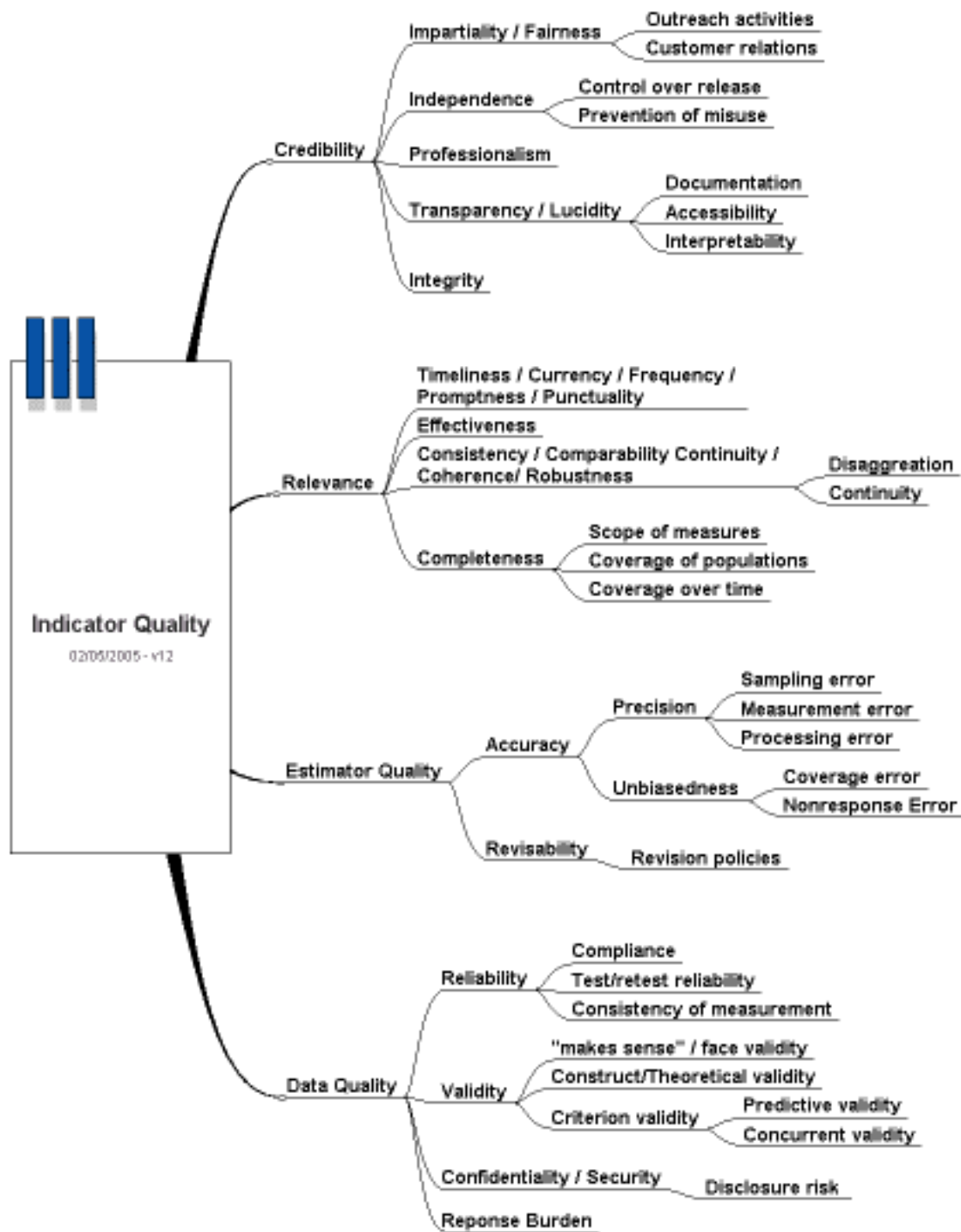


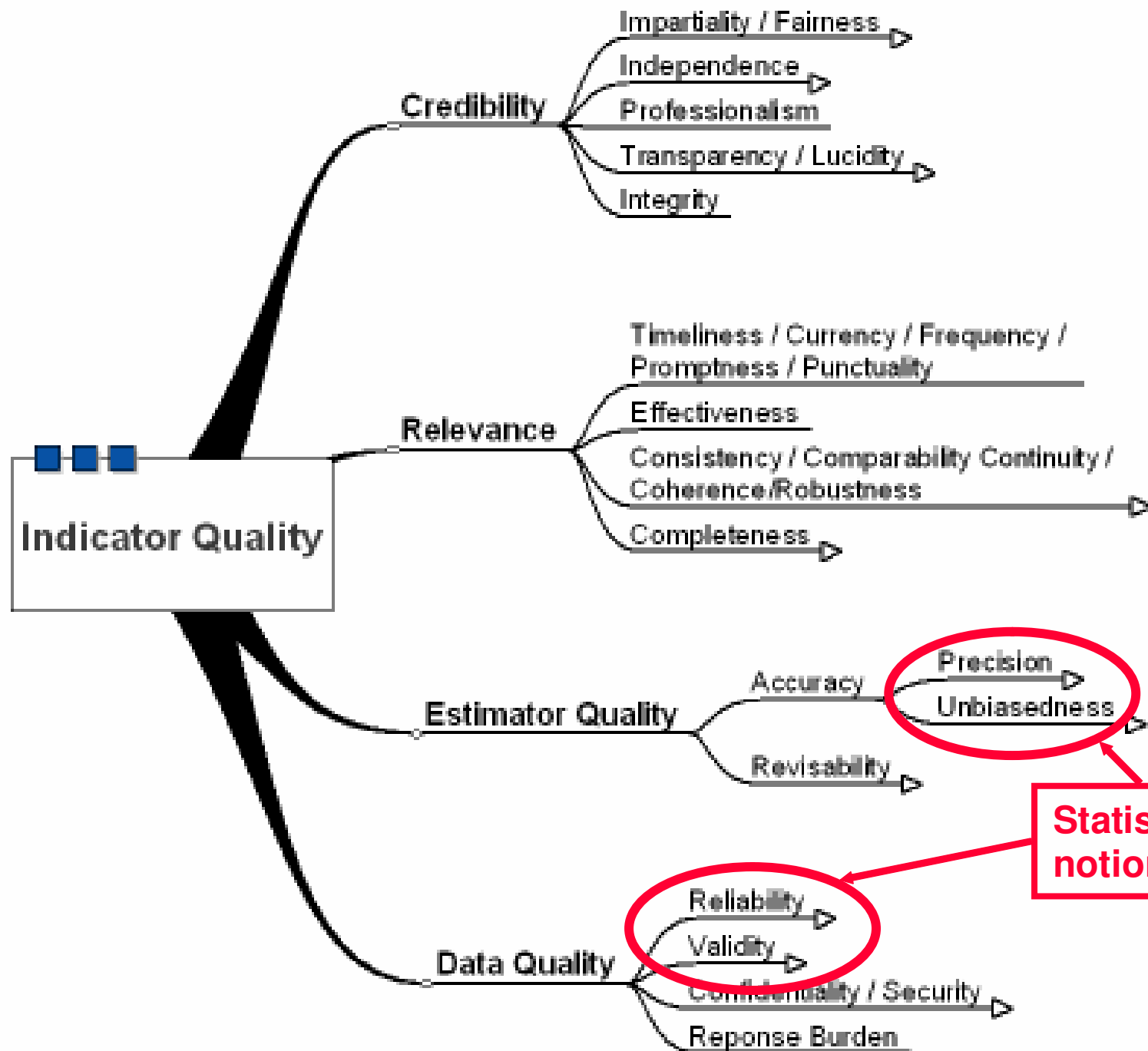
# 2005 Indicator Quality Workshop

- Participants from several countries, experts and students of information quality
- Focus on what quality criteria should be taken by SUSIA

# Agreements

- “Fitness for Use” should predominate
  - Implication that quality of an indicators varies across different uses of it
  - Quality is not inherent in an estimate itself
- Review of a conceptual map that permitted four key constituent elements of fitness for use to be used





**Statistical notions**

# Some Special Notes about Credibility and Relevance

- Foreign to most statistical treatments of quality
- Determined by the user
  - Hence, the large scale SUSA outreach

# Four Key Concepts of Quality

- Credibility
  - Is the source impartial, independent of different “points of view”?
  - Is the source professional?
  - Is the process of indicator production transparent?
  - Does the source have integrity?

# Four Key Concepts of Quality

- Relevance

- Is the information timely to my use?
- Is the information frequently enough available for my use?
- Is the information consistently defined over time?
- Does the information cohere with other similar indicators?
- Is the information complete with regard to my uses?

# Four Key Concepts of Quality

- Accuracy
  - Precision
  - Unbiasedness
- Data Quality
  - Reliability
  - Validity
  - Confidentiality

# Implications for Prioritization on Indicators

- An indicator facilitating multiple uses is more desirable
  - show change over time to assess trends and patterns
  - show breakdowns by level of geography
  - show breakdowns by demographic subgroups
  - have ability to be related to other indicators across traditional subject matter boundaries

# Presentation of Indicators

- Credibility
  - Identity of source
  - Description of source re independence, point of view, etc.
- Relevance
  - Explicit statement of intended uses
  - Commentary on common, but inappropriate uses
- Precision
- Data quality

# *Ceteris Paribus*, Indicators are Preferred when they have...

- documented sources and methods
- sources that are widely respected
- alternative possible uses
- time, geography, subgroup, and conceptual disaggregation
- high precision
- based on data with high reliability and validity

# SUSA Indicator Quality is a Partnership

- Outreach efforts help to determine credibility and relevance
- Technical reviews help to determine accuracy and data quality