Information Quality and Management Systems
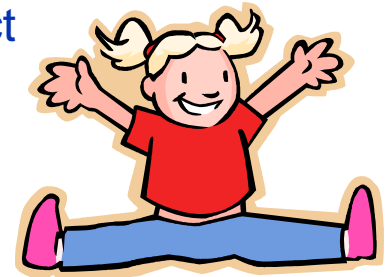
Will ISO 9001:2008 be enough to ensure semantic quality?

Knut Anderssen, Dr. Ing
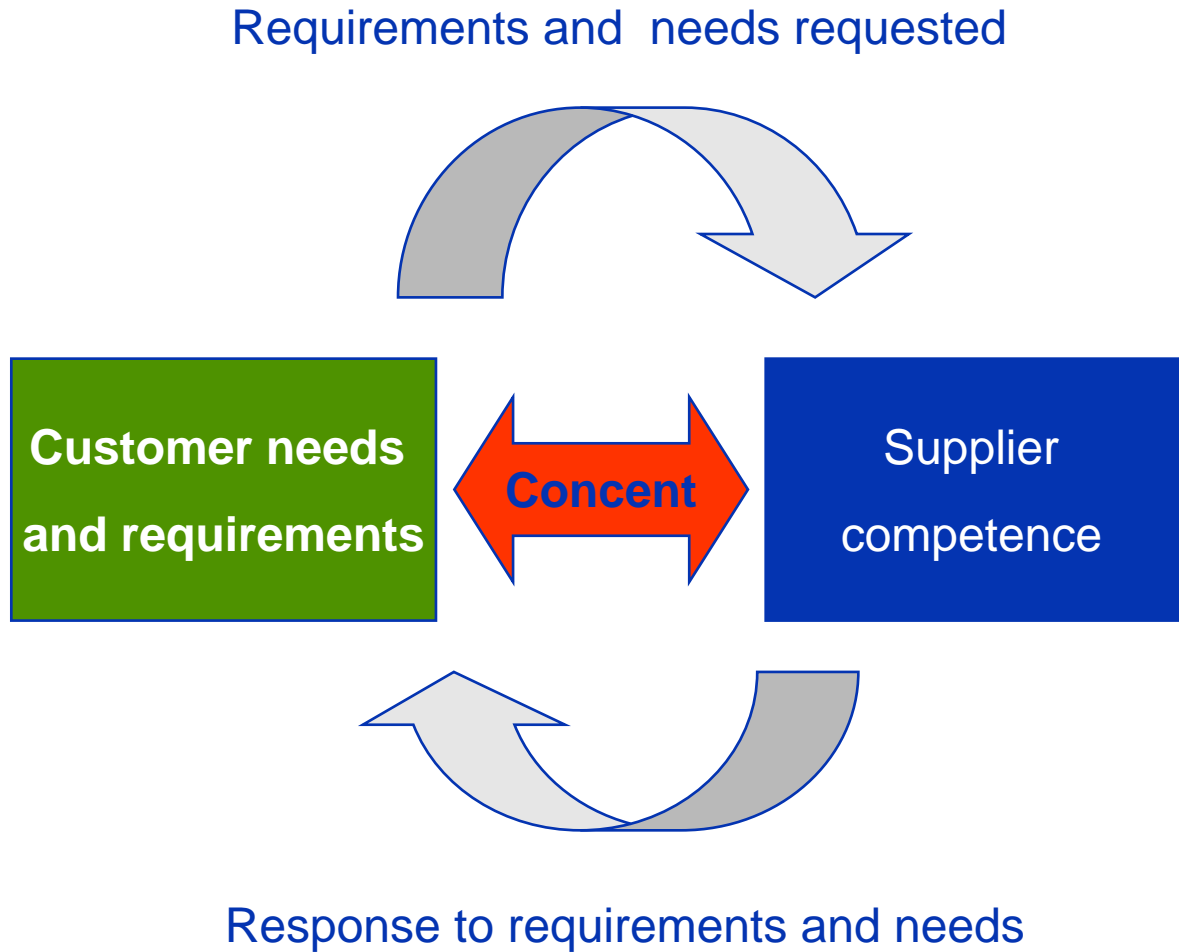2009-05-10

Customer – Supplier Dialogue: *Before*

Customer:

Can you…?

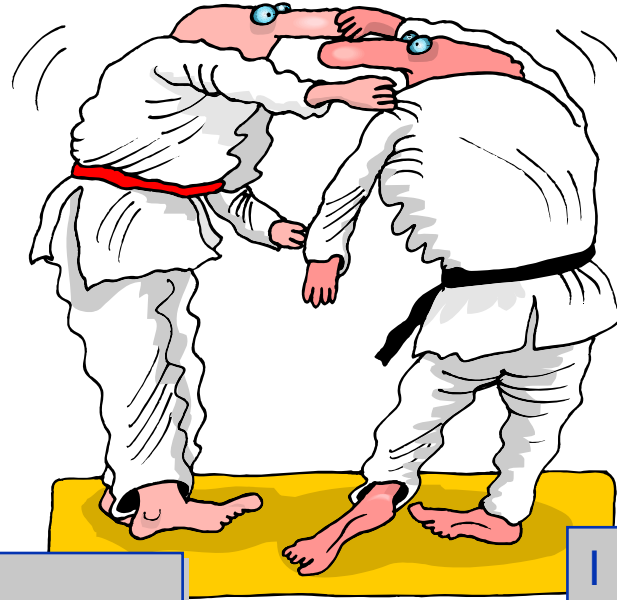Supplier:

Yes, I can!

- Common language
- Points of references
- Mutual respect

The Dialogue Flow

Requirements and needs requested

Customer needs and requirements ← **Concent** → Supplier competence

Response to requirements and needs

Customer – Supplier Dialogue: *After*

I said

I meant

You promised

You did not inform

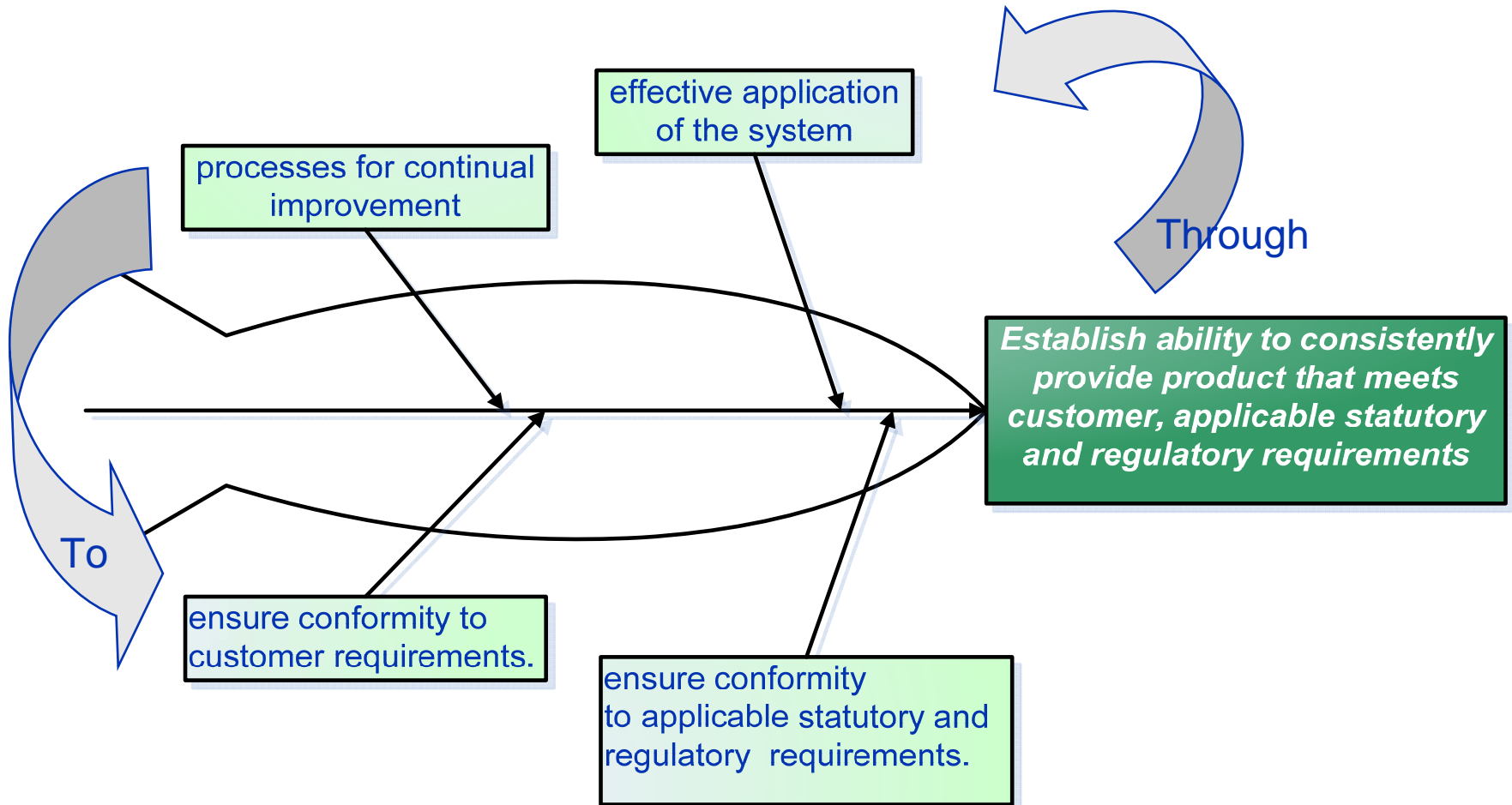You did not conform

I understood

I referred

I specified

I did inform

I have proved

I documented

The Basic Idea of ISO 9001

effective application
of the system

processes for continual
improvement

Through

**Establish ability to consistently
provide product that meets
customer, applicable statutory
and regulatory requirements**

To

ensure conformity to
customer requirements.

ensure conformity
to applicable statutory and
regulatory requirements.

The Elementary Process Module

Execution of Management controls

Supply of direct inputs

Value added through transformation

Delivery of output value

Supply of resources
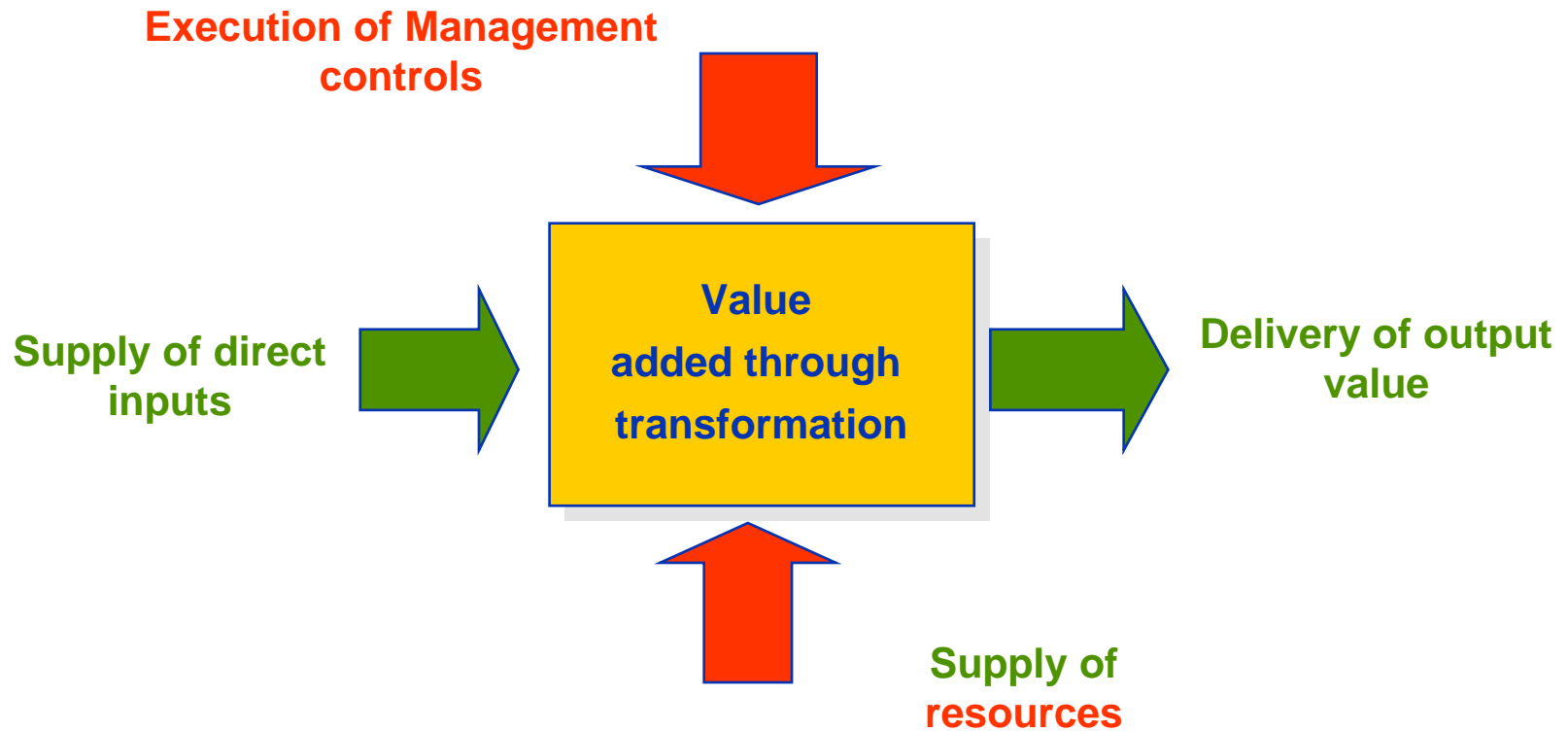
Building Quality in an information system

Quality of information

Quality of analysis
(Characteristics)

Quality of results

(Characteristics of analysis)

Quality of enabler processes
(Performance characteristics)

Data quality

(Characteristics)

Quality of process
control (Characteristics)
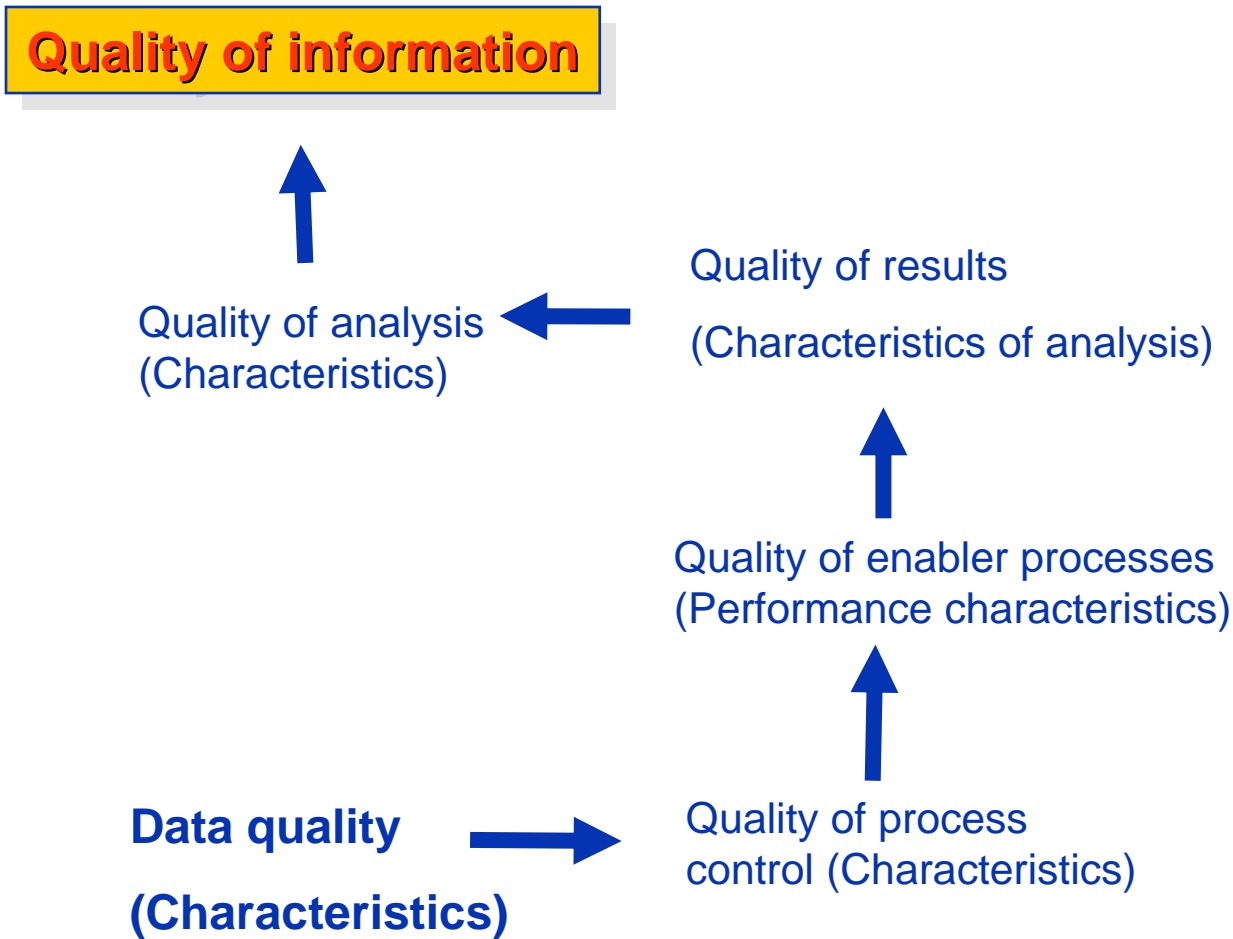
ISO 9001:2008/ A pragmatic system model
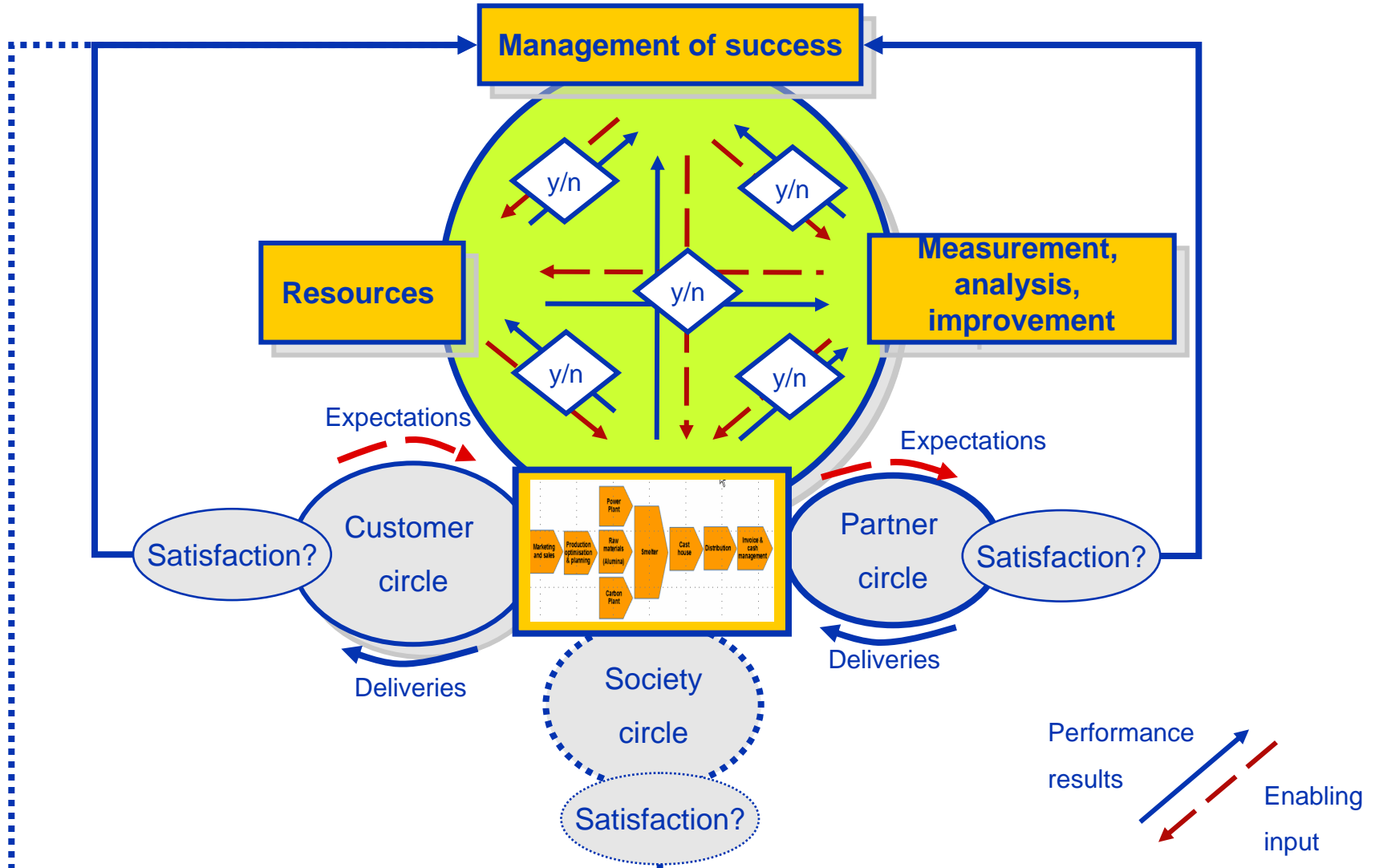
Needs of information in a Quality System

1. **To provide evidence of meeting customer requirements**
   - Semantic: References to standards
   - Semantic and syntactic: Results of inspections and testing, type of documentation

2. **To provide evidence of meeting applicable statutory and regulatory requirements**.
   - As above

3. **To provide evidence of enhancement of customer satisfaction**
   - Semantic: Reference to procedure
   - Pragmatic, semantic: Results

4. **To enable continuous improvement**
   - Pragmatic organisation

5. **To enable process control**
   - Pragmatic organisation
   - Semantic, syntactic performance

6. To ensure experience feedback and learning
   - As above

7. To enable cause analysis and risk analysis.
   - As above

Characteristics of Data and Information

**Characteristics of data and information**

- Levels of perspectives: Syntactic, semantic, pragmatic
- Context properties: Accuracy, precision, consistency, repeatability, reproducibility
- Context representation: Complete, selective, sporadic, random
- Context affinity: Relevance, adequacy, sufficient
- Time perspective: Before, during, after (or proactive-reactive/active-analytic)

Characteristics of information processes (systems)

1. Availability: Unlimited, at intervals, pr request, authorisation,.
2. Lead time: Real time, promptly, within
3. Exclusiveness: User competence level
4. Cautions: Essential statements on applicability

Levels of perspectives: Syntactic, semantic, pragmatic

Degree to which the data obtained is suitable and worthwhile for a given use.

Subjective and dependent on user and use

Perceived relevance for purpose

Pragmatic

Characteristic

Data obtained

External reference/ Requirement
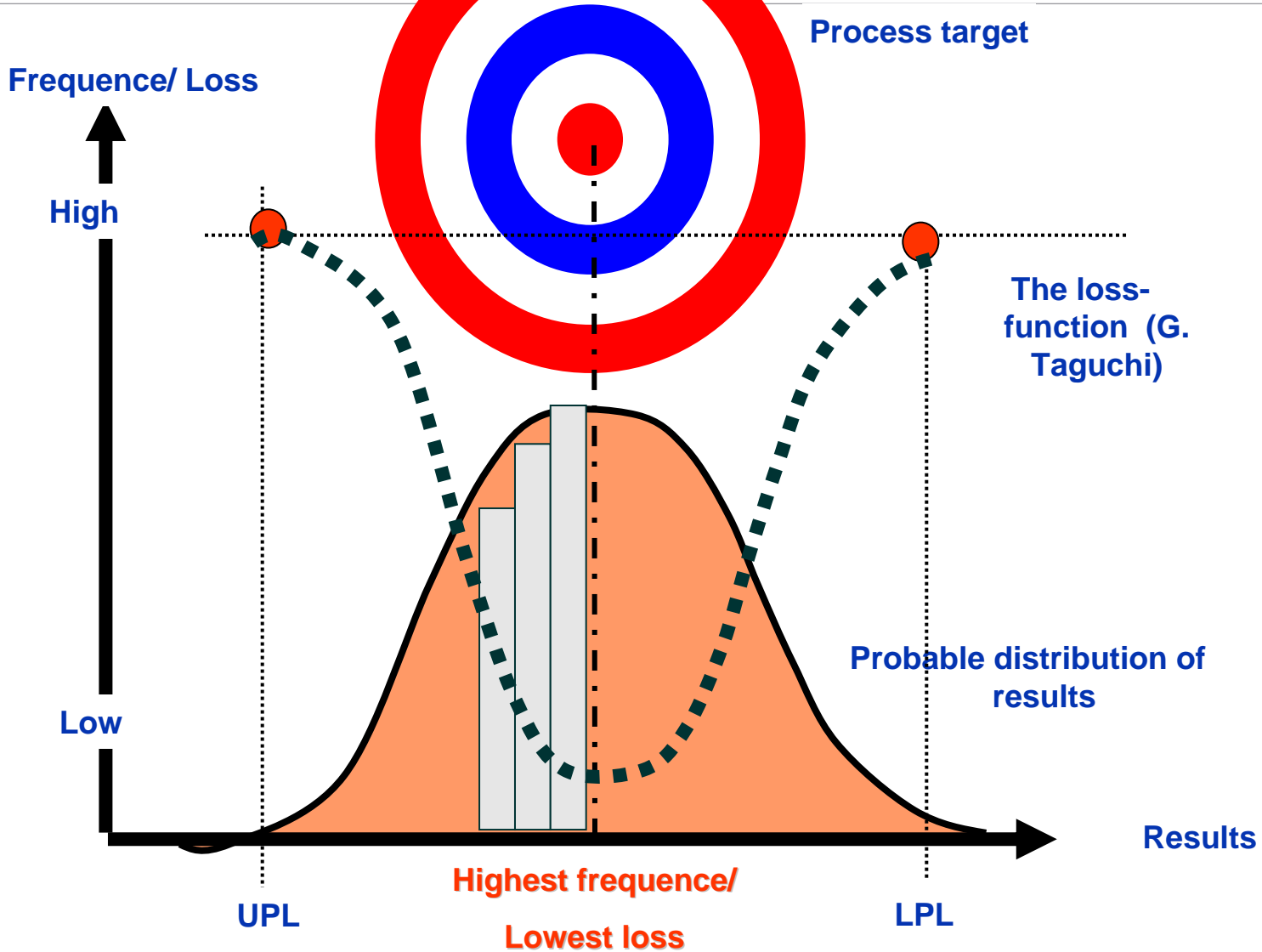
Syntactic

Semantic
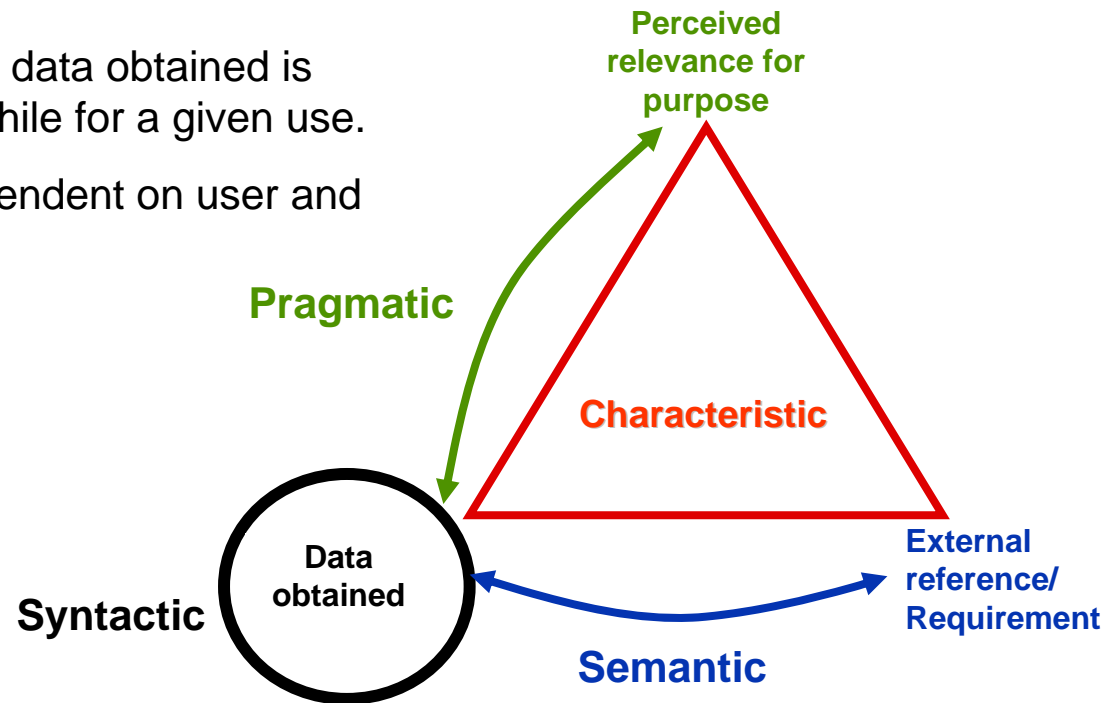
Conforming to integrity rules.

It is objective, independent of user or use

Degree to which data obtained corresponds to represented external reference.

It is objective except for user determination of relevancy and correspondence

Data for Target and Variance
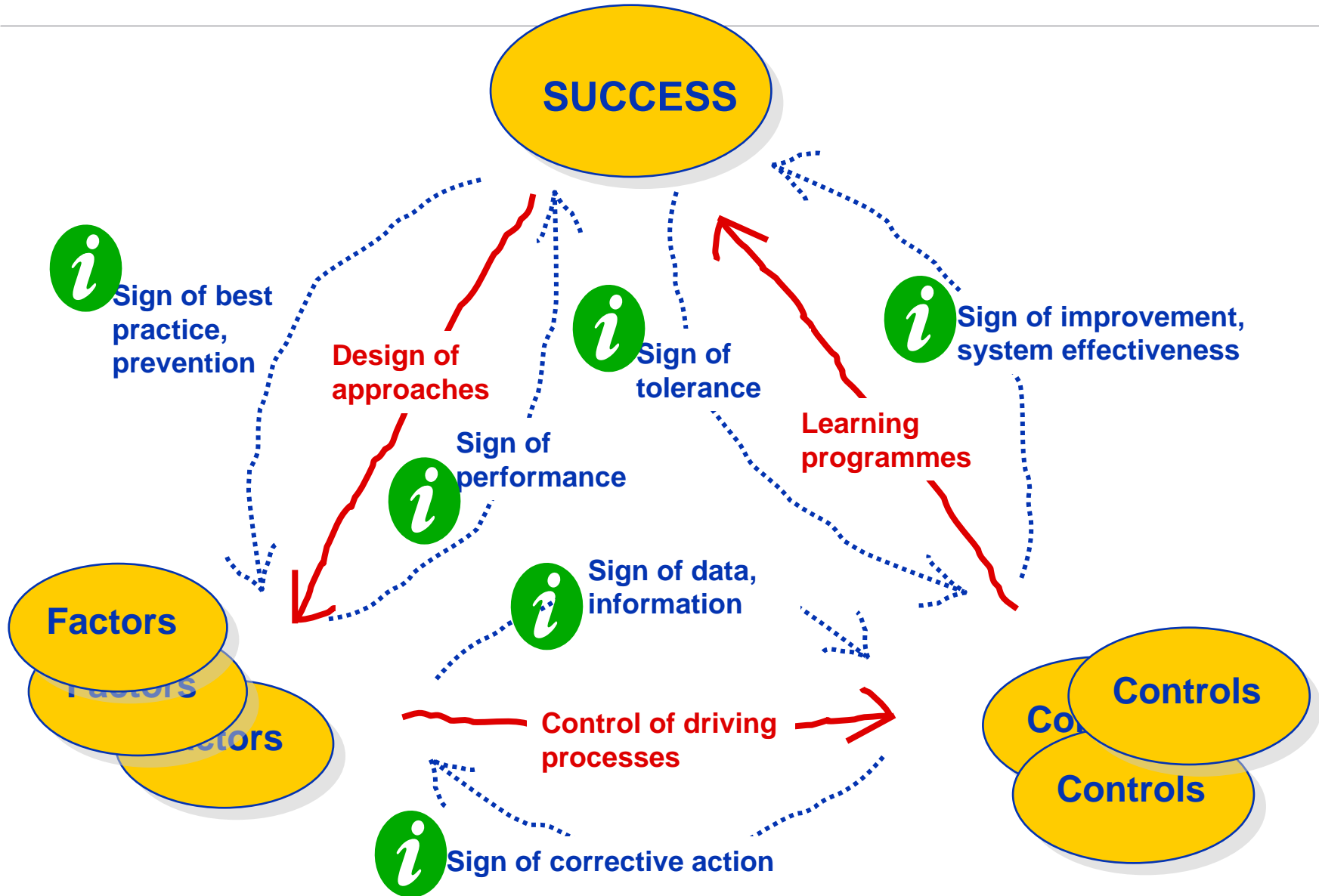
Application to a value adding process

7.2.1 Determination of requirements related to the product

The organization shall determine

a) requirements *specified by the customer*, including

the requirements for delivery and post-delivery activities,

b) requirements *not stated by the customer* but necessary

for specified or intended use, where known,

c) *statutory and regulatory requirements* applicable to

the product, and

d) *any additional requirements* considered necessary

by the organization.

Generic Information System Model: (1)

SUCCESS

i **Sign of best practice, prevention**

Design of approaches

i **Sign of tolerance**

i **Sign of improvement, system effectiveness**

Sign of performance

Learning programmes

Factors

i **Sign of data, information**

Controls

Control of driving processes

Controls

i **Sign of corrective action**

Conclusions

- ISO 9001:2008 is basically pragmatic with regard to addressing customer quality requirement. The standard is focused on product and service quality, and quality of information related to prove this.

- It depends fully on the dialogue between customer and supplier how deep each contract will drill into semantic and syntactic layers for characteristics of products and services. The standard in itself, alone, does not ensure semantic quality.

- ISO 9001:2008 is basically semantic with regard to addressing laws and regulations, focusing on compliance and fulfilment

- ISO 9001:2008 is basically pragmatic with regard to system performance requirements, such as effectiveness of systems, actions, internal audits. Continuous improvement is a pronounced requirement without support for semantic evaluation.

- ISO 9001:2008 does not offer substantial support for semantic and syntactic evaluation. On the other side, there is nothing in this standard against including the most stringent regimes of information quality control, when parties agree to do so

Thank you for your kind interest!