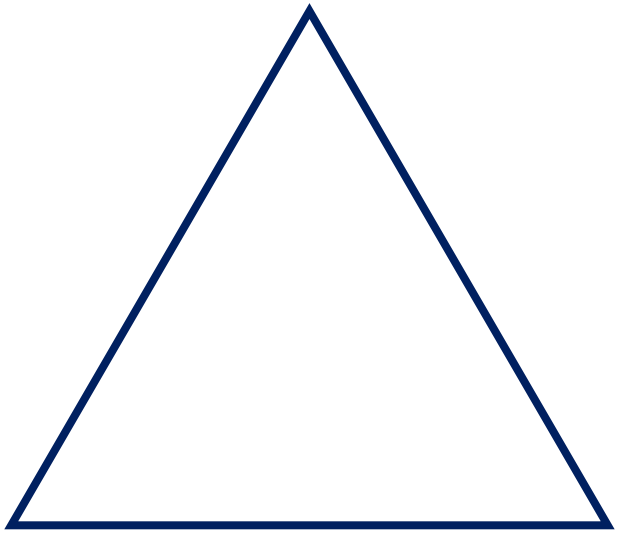
PM101: Lecture 14
Quality

Quality is a cornerstone of the project

Time



Budget

Quality

Specification
Performance
Scope
Procedures

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What is quality?

QUALITY IS WHAT THE CUSTOMER THINKS IT IS!

Quantitative view

Qualitative view

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What is quality?

Satisfaction = Perception - Expectation

- Meeting customer requirements
- Meeting the specification
- Solving the problem
- Being fit for purpose
- Satisfying or even delighting the customer

QUALITY IS WHAT THE CUSTOMER THINKS IT IS!

Turner and Hueman (2007), in *The Gower Handbook of Project Management,* Aldershot, UK: Gower, Photo:Ashrafhage, Creative Commons, Attribution-Share Alike 3.0 Unported.

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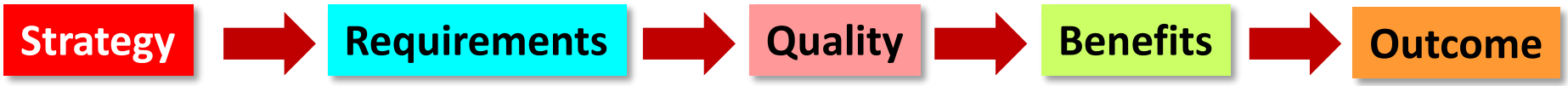
Where quality fits in



How we want the output to change the organisation for the better

What the customer says they want: conformance and performance factors for the management process and the output

How we show that the project and the output are conforming and performing as promised

How we know that the output is enabling the outcome the customer desires

Signal to put things right ✗ ? ✓ **Promise fulfilled**

Turner and Hueman (2007), in *The Gower Handbook of Project Management. Aldershot, UK: Gower*

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The five element model

Quality of the output – 'the ultimate arbiter of the quality of the project'

Quality of the management process – the work processes that turn the input efficiently and safely into the output

Quality assurance – focused on 'right first time' performance

Quality control – fulfilling quality requirements in the management process and the output

Attitudes – Everyone's aim is 100% performance

Turner and Hueman (2007), in *The Gower Handbook of Project Management,* Aldershot, UK: Gower

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Quality assurance

Quality assurance: the part of quality management focussed on providing confidence that quality requirements can be fulfilled. **QA**

- defines the organisation, selection, training, systems, processes and standards to be applied to the project work and the project output
- evaluates project performance regularly to check the organisation, systems, processes and standards are being implemented as promised
- is an independent check
- often done by people who are outside the project

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Quality control

Quality control: the part of quality management focussed on fulfilling quality requirements – that is the quality of the project work and output defined in the specification. **QC**

- monitors specific project results against defined requirements or standards
- focuses on eliminating causes of unsatisfactory performance
- is part of day to day activity
- generally done by people working inside the project

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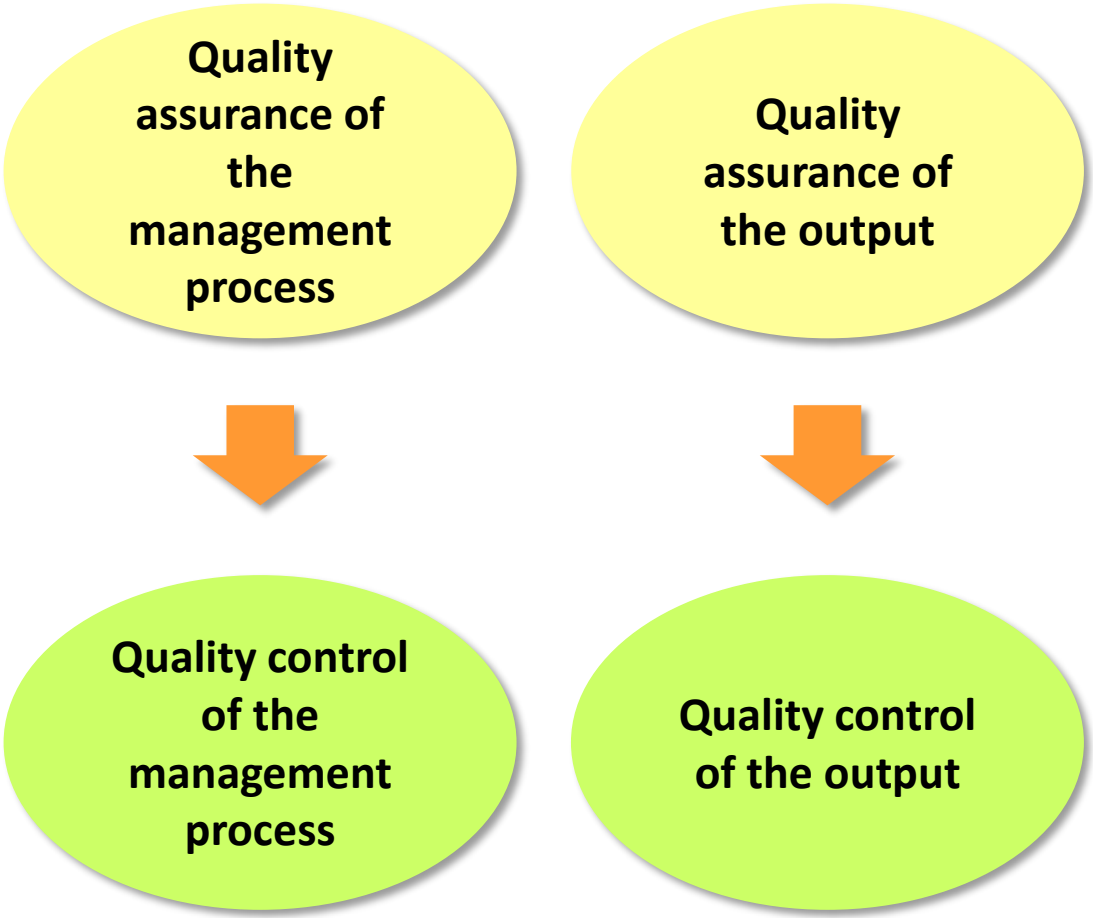
Cornerstones of quality

Do we have the right shape of organisation, selection, training, systems, processes and standards to deliver project work and output of the required quality?

Is the right organisation in place, are the people properly selected and trained, and are we working to the systems, processes and standards we promised to?



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Ways to measure quality

	More quantitative	More qualitative
Conformance measures	• Accuracy • Functionality • Compliance	• Customer preferences • Fitness for purpose
Performance measures	• Performance • Reliability • Durability • Punctuality • Production cost • Life cycle cost	• Usability • Customer attitude • Customer reactions • Aesthetic effects

Measure quality in terms of what the customer says is important.

From Maylor, H., *Project Management.* Harlow,UK: Pearson Education, 2003, p167

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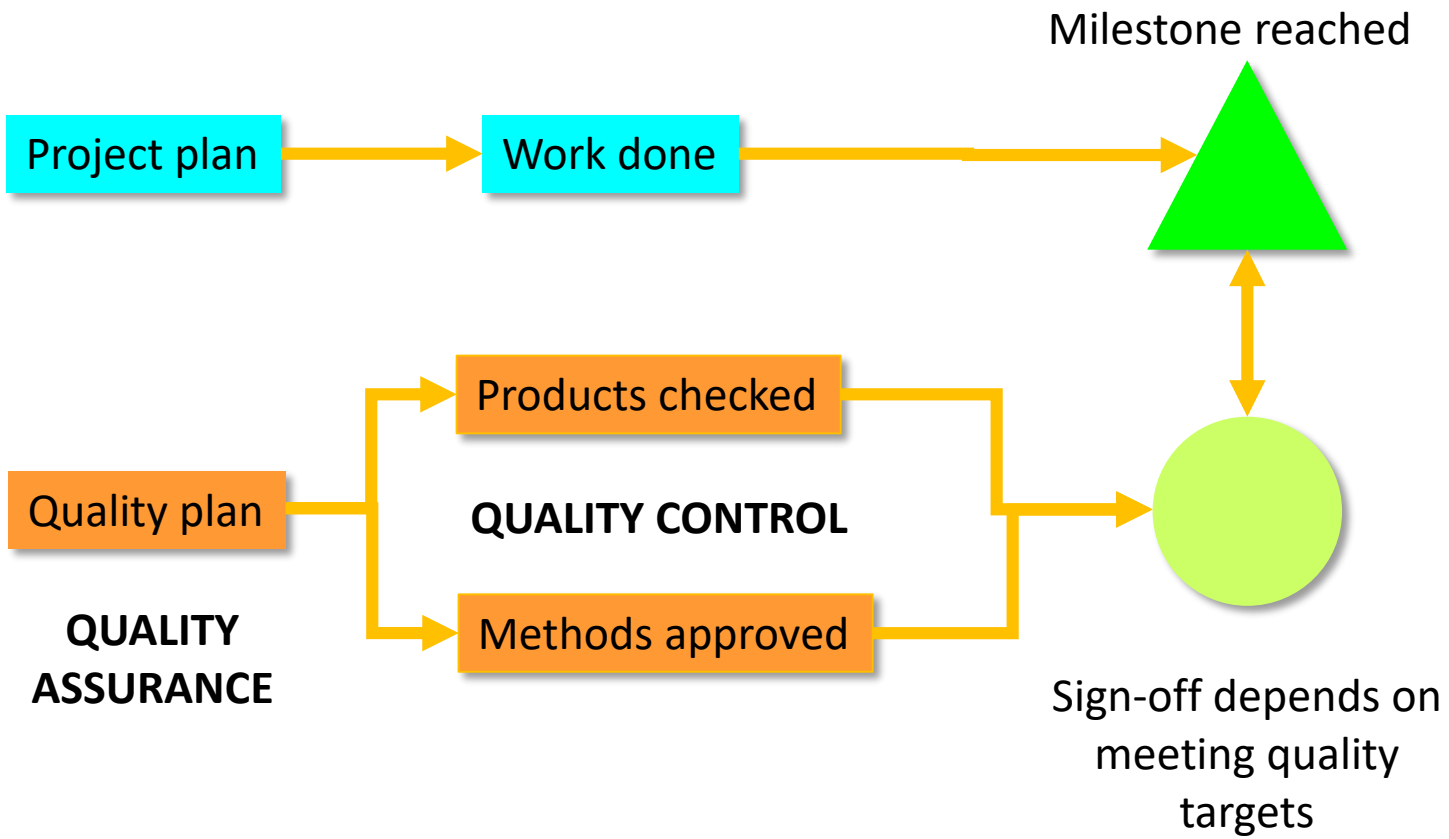
Quality sign off



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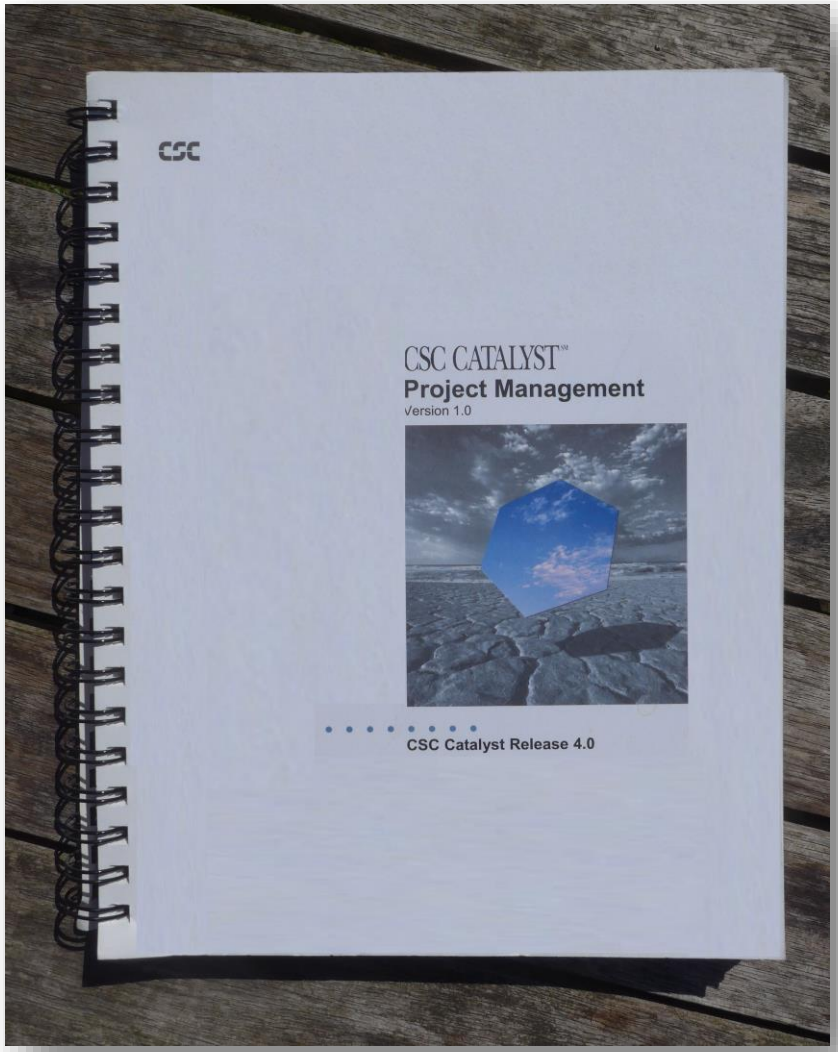
Methodologies: a way to embed quality



In a project management context, a methodology is:

- a collection of inter-connected tools and techniques
- **a distillation of accumulated experience and wisdom**
- a mechanism for ensuring consistency in approach and delivery
- **a means for competitive advantage**

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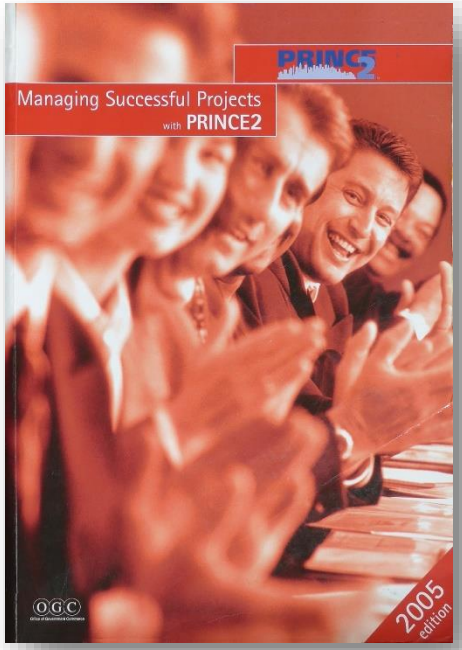
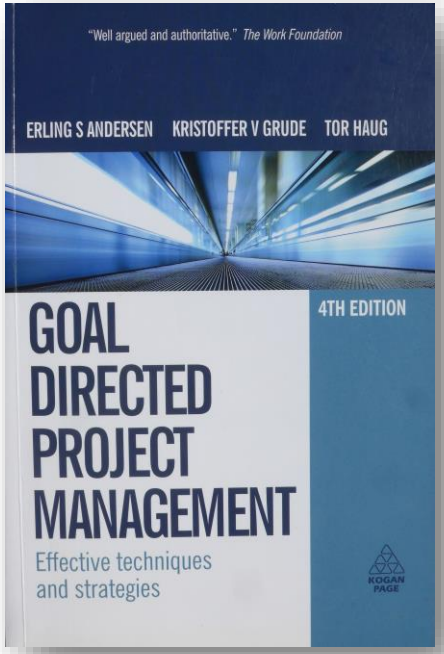
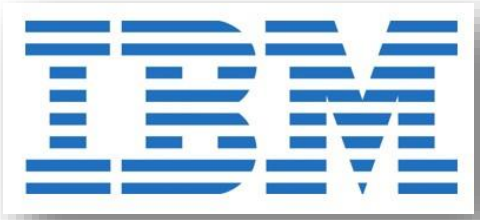
Methodologies: a way to embed quality







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Is a methodology right in every case?

FOR	AGAINST
Clarifies requirements	Causes extra bureaucracy
Clarifies responsibilities	Slows down decision making
Gives consistency of approach between projects	Does not directly improve the quality of the actual product
Enables documents to be traced	May not suit the working style of all customers
Adds to the organisation's credibility	May increase the overall length of projects
Embeds standard ways of working	May upset key project managers

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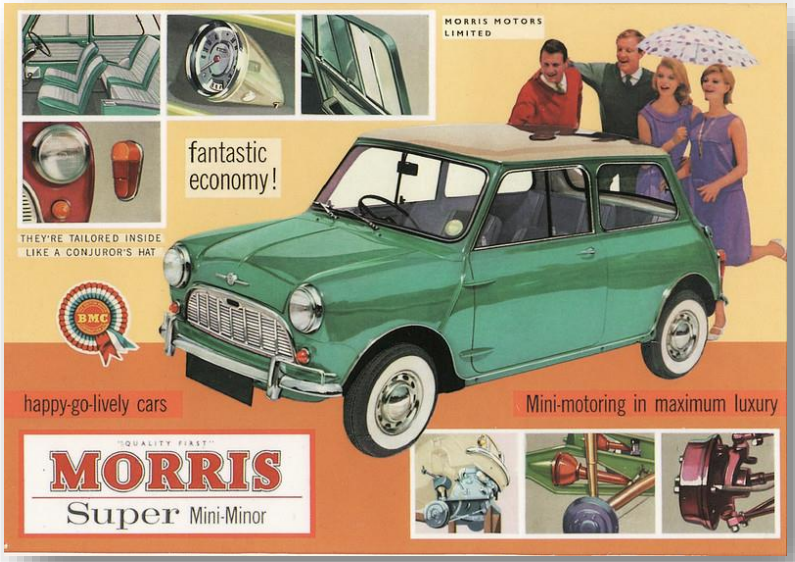
Consumers' quality requirements have evolved



What was acceptable in 1960 is not acceptable in 2020

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Total Quality Management

From *The Manufacturing Industry Handbook*, CSC, 1996

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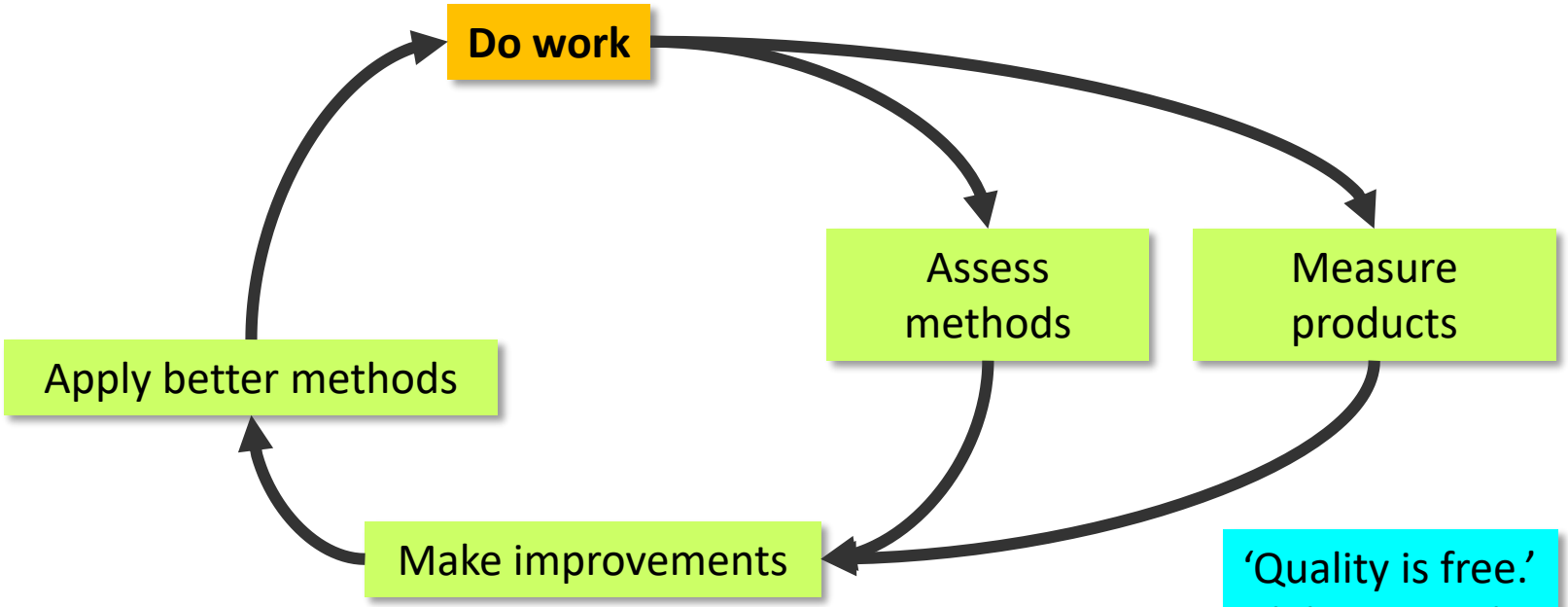
Continuous improvement

Continuous process improvement
- Use scientific methods
- Base decisions on facts and data
- See perfection as the goal

KAIZEN: Better quality means higher productivity and less rework which leads to better results



'Quality is free.'
Philip B. Crosby

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The Capability Maturity Model:

a way to develop and refine an organisation's processes

	Name	Processes	Organisation	Performance
5	**Optimising**	Continuous improvement	Addressing process variation	Ever improving
4	**Managed**	Quantified quality goals	Precise control, using statistical techniques	Predictable
3	**Defined**	Set of standard processes	Manage to processes	Consistent
2	**Repeatable**	Basic processes, may vary by project	Basic project management	High risk of lateness and overspend
1	**Initial**	Ad hoc, little if any control	Individual efforts	Erratic, generally late and over budget

Developed by the Software Engineering Institute at Carnegie-Mellon University in the mid-1980s

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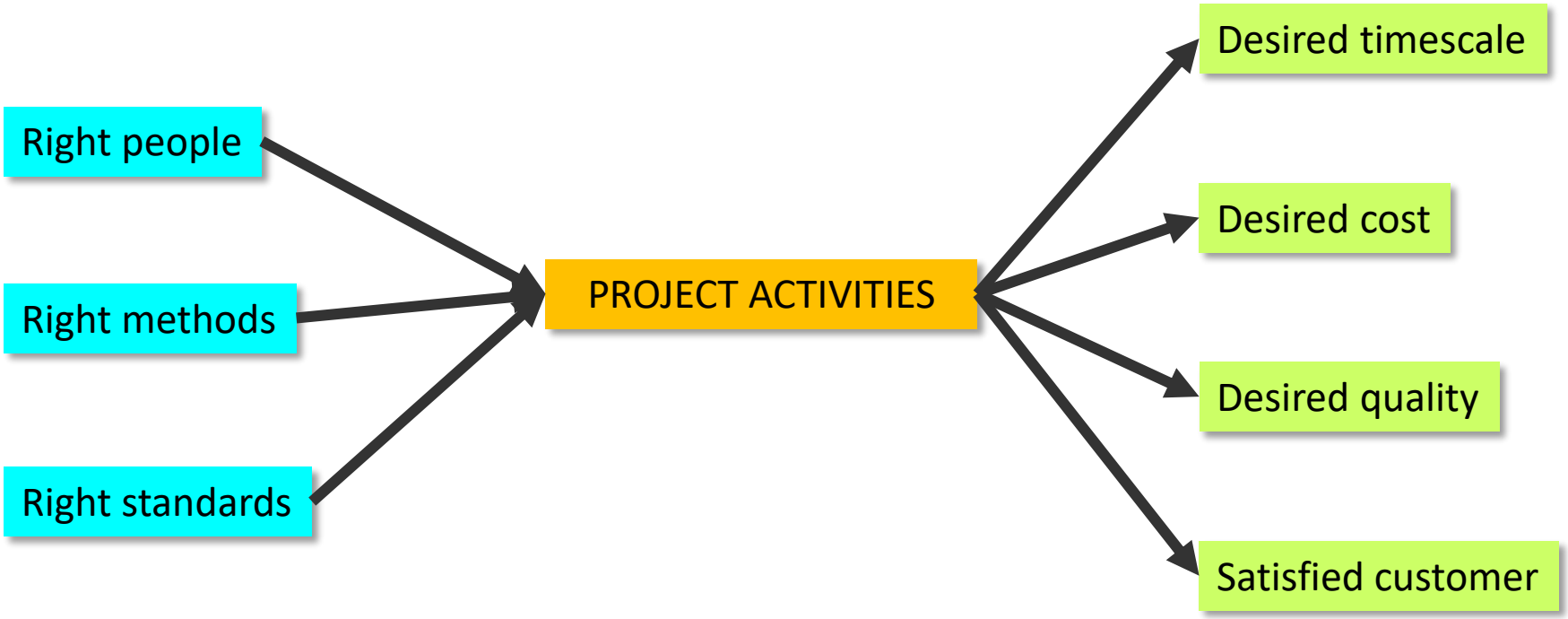
Quality in, quality out



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Quality: core ideas

The customer for the project defines what is the acceptable level of quality.

Quality is about delivering the project output so that it meets the customer's expectations, and also doing that in a way they find acceptable.

Continually measuring the quality level of the project work indicates whether the project output is on target to deliver the promised benefits.

Quality assurance determines the standards to which work must be done; quality control assesses whether the work done and output created are satisfactory.

Quality achievement is a way to determine whether the project can move from one stage to another.

Methodologies embed best practice so that it is easier to sustain an acceptable level of quality from one project to another.

Continuous improvement techniques can be used to ensure that over time project work continues to satisfy ever-rising customer expectations.

See Zavanak page *Quality*.

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