

# Eight Aspects of Actions in Improvement Plans

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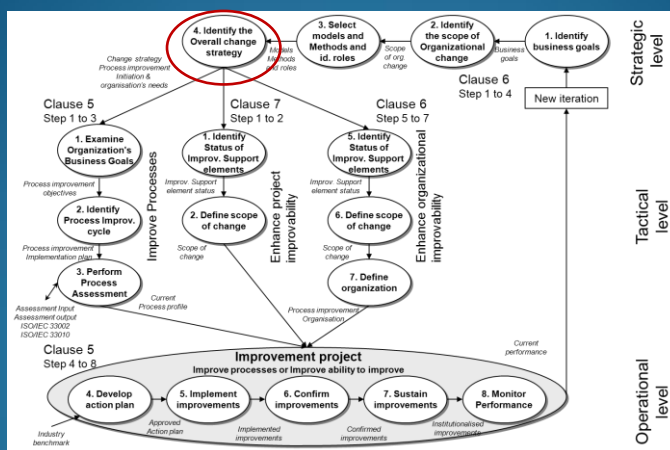
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## ISO/IEC 33014 Information technology — Process assessment — Guide for process improvement



ISO/IEC 33014 Figure 1 — Improvement framework of activities with steps and relations  
See lit. ref. [3]

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# Identify your change strategies

ISO/IEC 33014 identifies ten overall change strategies:

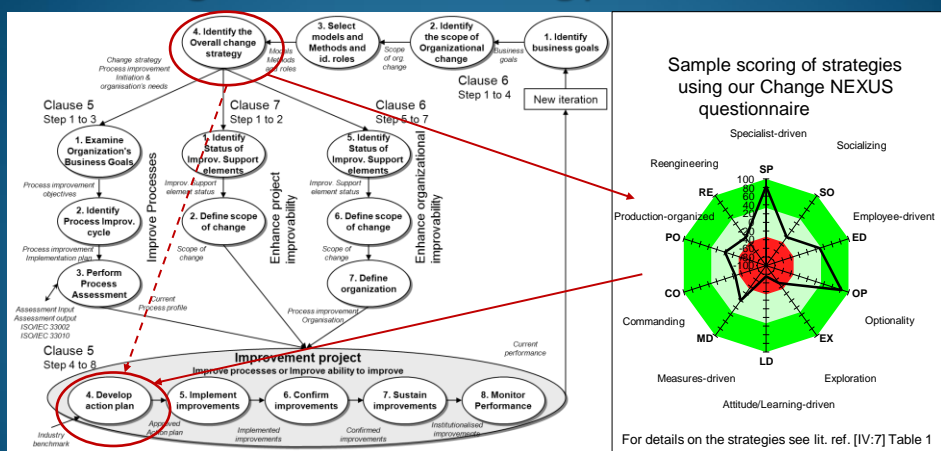
- Attitude-driven (Learning-driven)
- Commanding
- Employee-driven
- Exploration
- Measures-driven
- Optionality
- Production-organized
- Reengineering
- Socializing
- Specialist-driven

See lit. ref. [1: 8.4], [IV: 6] Table 1 for definition and examples

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# Missing link from strategy to action



ISO/IEC 33014 Figure 1 — Improvement framework of activities with steps and relations  
See lit. ref. [3]



## Our research work (1:2)

- From the change literature referenced in ISO/IEC 33014 we extracted recommendations for action characteristic to the overall strategies
- We supplemented our review with other relevant change literature
- We modified the original statements in the texts only to make them imperative, e.g:

Original formulation	Reformulation
<p>“Leadership of change belongs to one small group of people, typically located at the top of the formal hierarchy”</p> <p>Lit. ref. [7: 605]</p>	<p>“Ensure that leadership of the change belongs to one small group of people, typically located at the top of the formal hierarchy”</p> <p>Applicable strategy: Production-organized</p>

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## Our research work (2:2)

- 32 literature references covered in total
- 665 recommendations for action found
  - 233 selected after review; 16-35 per strategy
- 8 groups of recommendations (aspects) emerged after examination of the first two strategies
  - The aspects remained constant for all the strategies (hypothesis confirmed)
  - The aspects were not orthogonal (never our intention)
  - A recommended action can be assigned to more than one aspect (only few)
- Conclusion: The eight aspects should be considered in any change or improvement action plan
  - i.e. constitute a framework supplementing ISO/IEC 33014

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## The eight aspects to be considered in an action plan



Communication



Competences and Training



Culture



Decision-making



Knowledge acquisition



Methods and Techniques



Organizing



Processes and Plans

See lit. ref. [II: 148] Table 1 for definition and examples

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## Short definition of the eight aspects



### Communication

Types of information that should be communicated, to/by whom, when/through which channels



### Competences and Training

The competences management and change-team should have before the work on the change is initiated, or which should be built up on the way



### Culture

The culture that should be established / changed / supported in the organization to secure the success



### Decision-making

Decisions and commitments it is important to make and achieve before and during the work on the change, who should make them, when and within what scope



### Knowledge acquisition

The knowledge that should be obtained / gained / collected before and during the work on the change



### Methods and Techniques

Concrete methods and techniques that should be used in order to execute the change



### Organizing

How the change-team as well as all involved or affected by it should be organized / structured



### Processes and Plans

Concrete plans and processes that management and change-team establish for the work

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See lit. ref. [II: 150-154] for full definitions

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## Commonality of aspects in ISO strategies

Aspect	Most common in ISO strategies	Least common in ISO strategies
 Communication	Commanding Reengineering	Employee-driven Exploration
 Competences and training	Attitude-driven	Commanding Specialist-driven
 Culture	Attitude-driven	Commanding Reengineering
 Decision-making	(no specific)	(no specific)
 Knowledge-acquisition	Specialist-driven	Commanding Optionality
 Methods and techniques	Socializing	(no specific)
 Organizing	Exploration	(no specific)
 Processes and plans	Production-organized Reengineering	Employee-driven Socializing

See lit. ref. [II: 150-154] for details

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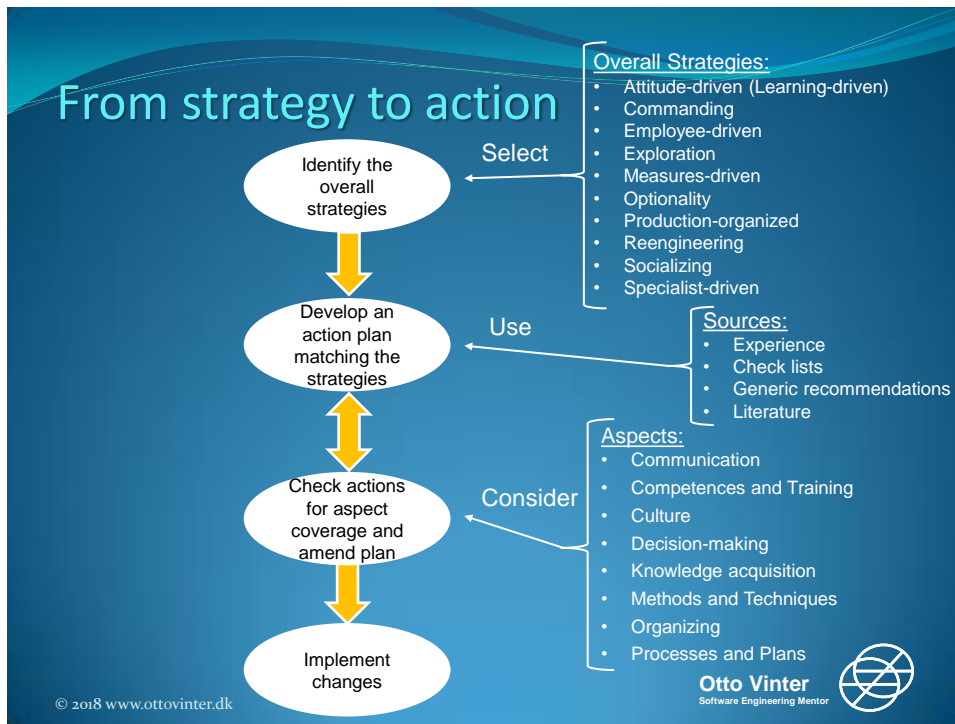
## How we intend the aspects to be used in practice

1. Find the set of overall strategies applicable to your context
2. Select / Design a set of recommendations for action that fit each of the strategies
3. Contextualize and merge the recommendations into a plan for action
4. Check that all eight aspects are covered sufficiently, and amend your plan as needed

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## Another perspective on the use of the aspects

- The aspects could also serve as a framework for understanding and characterizing existing and new literature on change management
- Analyzing and evaluating the contribution in terms of the eight aspects could provide you with an understanding of:
  - what is the focus of the authors?
  - which aspects are not covered by the authors?
  - how should we compensate for aspects not covered?

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## SPI Manifesto related aspects

SPI Manifesto values	SPI Manifesto principles	Related aspects
People	1. Know the culture and focus on needs	Culture, Knowledge acquisition
	2. Motivate all people involved	Culture
	3. Base improvement on experience and measurements	Competences and training, Culture
	4. Create a learning organization	Culture, Competences and training
Business	5. Support the organization's vision and objectives	Methods and techniques, Processes and plans
	6. Use dynamic and adaptable models as needed	Methods and techniques, Knowledge acquisition
	7. Apply risk management	Methods and techniques
Change	8. Manage the organizational change in your improvement effort	Processes and plans, Methods and techniques
	9. Ensure all parties understand and agree on process	Communication
	10. Do not lose focus	Methods and techniques, Processes and plans

Lit. ref. [11: 156] Table 2

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## Comparison of recommendations per aspect to the SPI Manifesto

	Reviewed Literature		SPI Manifesto See lit. ref. [III]
• Methods & techniques	27.2 %	<<	42.1 %
• Organizing	14.6 %	>>	2.6 %
• Culture	12.9 %		10.5 %
• Decision-making	11.1 %	>>	2.6 %
• Competences & training	10.5 %		13.2 %
• Processes and plans	9.4 %		10.5 %
• Communication	9.1 %		13.2 %
• Knowledge acquisition	5.3 %		5.3 %

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# Thank you for listening



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## Literature referenced in these slides

3. ISO: ISO/IEC 33014. Information technology--Process assessment--Guide for process improvement, Geneva, Switzerland (2013).
4. Mintzberg, H.: Structure in Fives - designing effective organizations, Prentice-Hall (1983)
7. Huy, Q.N.: Time, temporal capability, and planned change. Acad. Manag. Rev. 26(4), 601-623 (2001)
13. Rogers, E.M.: Diffusion of Innovations. 5th Edition, Free Press (2003)
21. Ciborra, C.U. and Associates: From Control to Drift. The dynamics of corporate information infrastructures. Oxford University Press, Oxford, UK (2000)
22. Simon, H.A.: The Structure of Ill Structured Problems. Artificial Intel. (1973), 4, 181-201

### Other references used:

- I. Pries-Heje, J., Carstensen, P.H., Johansen, J. and Vinter, O.: Improving the Choice of Organizational Change Strategy. In: Larrucea, X. et al. (Eds.): Proceedings of EuroAsiaSPI 2018. Springer Series CCIS 896 (2018).
- II. Carstensen, P.H. and Vinter, O.: Eight Aspects of Actions in Improvement Plans. In: Larrucea, X. et al. (Eds.): Proceedings of EuroAsiaSPI 2018. Springer Series CCIS 896 (2018).
- III. Pries-Heje, J. and Johansen, J.: SPI Manifesto (2010)  
[www.iscn.com/Images/SPI\\_Manifesto\\_A.1.2.2010.pdf](http://www.iscn.com/Images/SPI_Manifesto_A.1.2.2010.pdf)
- IV. Carstensen, P.H. and Vinter, O.: Developing action plans based on strategy – aspects to consider. Software Quality Professional Journal, Vol. 20, Issue 2. American Society for Quality (2018).