

# SPiCE Benchmarking

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## The Benchmarking Approach

„You need to know where you are  
before you determine where you want to go to“  
(Lewis Carrol, Alice in Wonderland – also valid for Venice)

*But – where are the others?*

## Benchmarking Objectives

- To orient oneself for all activities towards world class standards and to implement the necessary processes and methods in your organisation.
- Benchmarking targets can include:
  - procedures and processes
  - functions
  - products
  - strategies
  - cost
  - structure of organisations

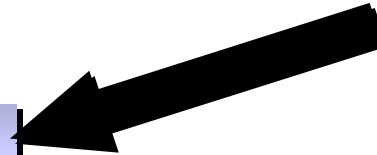


*Yes, **SPiCE** focuses  
on processes*

## Five Phases of the Benchmarking Process

- identify objectives
- internal analysis (assessment)
- comparison (benchmark)
- determine improvement measures
- implementation of measures

*This is the big  
difference to SPI!*



# Kinds of Benchmarking

- Jointly benchmarking
  - Either anonymous
  - Or in workgroups together with other friendly organisations (e.g. SPIRE approach)
- Shadow benchmarking
  - Compare yourself to competitors without their knowledge....
    - Could be very tricky...

# SPiCE and Benchmarking

- Aspects of SPiCE:
  - Capability determination (Where are we?)
  - Justification (Where do we invest?)
  - Differentiation (Certificate?)
  - Training, education (SPI vocabulary)
  - Process thinking, employee motivation
  - Preparation for organizational change
  - *Improvement methodology* (SPI pure)
  - Identification of *Best Practices*
  - Internal and external *Comparison*



**SPiCE**  
**Benchmarking**

## SPiCE as an Improvement Framework

- Some questions arise after performing a second assessment:
  - Which processes have changed?
  - Which processes have not changed?
  - Are tendencies recognizable?
  
- ☞ The calculations to analyse delta-assessments are not trivial, especially if you have assessed several process instances!

## Best Practices

- Whenever an assessment consists of inputs from several sources (interviews, documents, etc.) in various projects, then there arise the following questions:
  - Can we learn from the best projects?
  - Where do the „Best Practices“ hide?
  - Who are the champions (e.g. for reuse, for design, for project management)?
  - Who has the best test process?
  - Where are the best improvement opportunities – and how big is the associated risk?

☞ *An assessment can include up to 40 processes with 249 base practices and nine attributes with ca. 4 management practices!  
How do we find the best practices?*



## Comparison...

- Internal:
  - Compare sites at different locations
  - Compare departments
  - Compare similar application areas
- External:
  - Compare yourself to the average – or to the best in class
  - Compare by country
  - Compare by size
  - Compare by (industry) sector

☞ Any comparison has to be based upon your business-needs – otherwise it does not provide value

# Data condensation: NPLF Charts

## Ratings from one assessment

	PA 1.1 Durchf.	PA 2.1 Führen	PA 2.2 WPs	PA 3.1 Def.	PA 3.2 Res.	PA 4.1 Messen	PA 4.2 Lenken	PA 5.1 Ändern	PA 5.2 Verb.
MAN.1 Management									
MAN.2 Projekt-Management									
MAN.3 Qualitäts-Management									
MAN.4 Risiko-Management									

*Input for condensation*

1: PA(PA 1.1 Perform)=[ 1; 28; 64; 7]

2: PA(PA 1.1 Perform)=[ 1; 20; 69; 10]

3: PA(PA 1.1 Perform)=[ 7; 46; 42; 5]

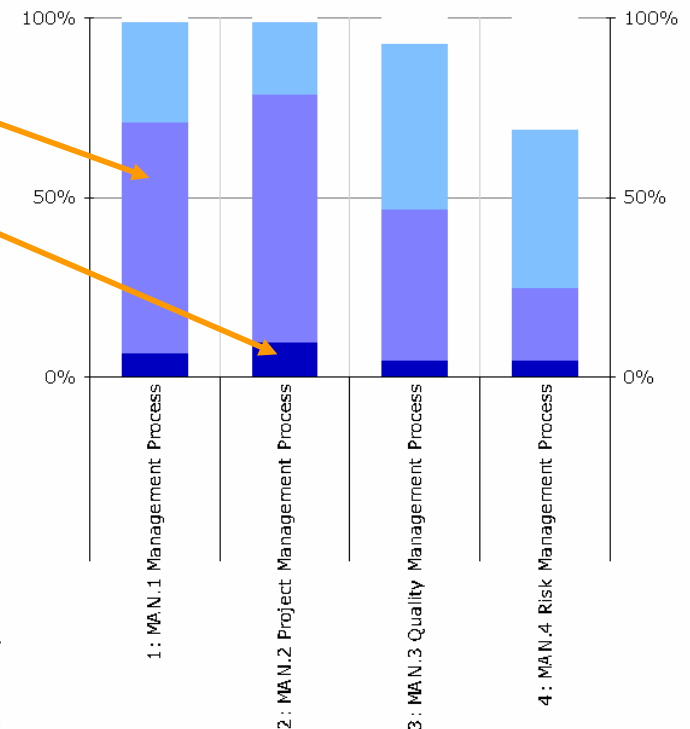
4: PA(PA 1.1 Perform)=[ 31; 44; 20; 5]

### Legend

- N ...Not achieved
- P ...Partially achieved
- L ...Largely achieved
- F ...Fully achieved

## Many combined results:

Detail: Management (MAN) (Attribute: PA 1.1 Perform)



# Capability Level (CL) Charts

*Ratings from one interview*

	Stufe 1	Stufe 2	Stufe 3	Stufe 4	Stufe 5
MAN.1 Management	■				
MAN.2 Projekt-Management	■	■			
MAN.3 Qualitäts-Management	■	■			
MAN.4 Risiko-Management	■				

*Input for condensation*

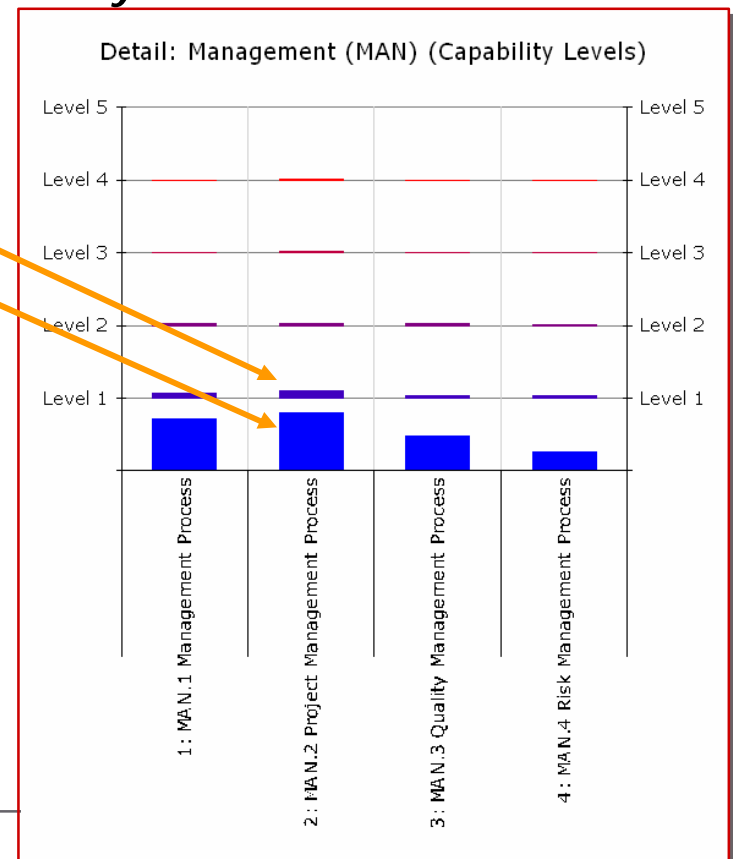
1:  $CL = [71; 7; 3; 0; 0]$

2:  $CL = [79; 10; 3; 1; 1]$

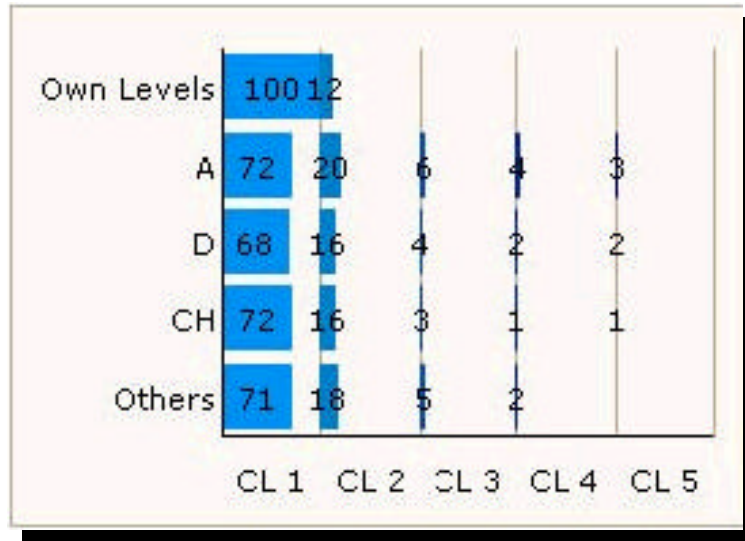
3:  $CL = [47; 4; 2; 0; 0]$

4:  $CL = [26; 4; 1; 0; 0]$

*Many combined results:*

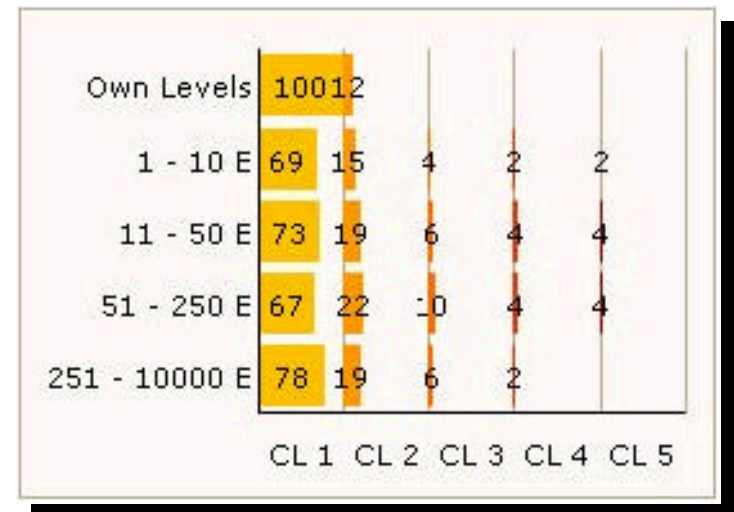


# Sample CL Chart for MAN.3 Quality Management

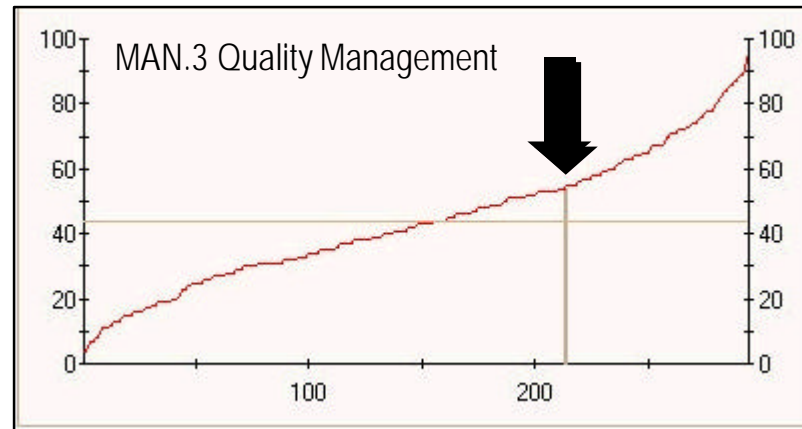


Comparison by country, showing the distribution of CLs

Comparison by company size  
(E...number of employees)



## Benchmarking: Ranking



*In comparison with 295 organisations and relating to the process MAN.3 Quality Management you reached 84.<sup>th</sup> place.*

*This means that you are better than 211 organisations or rather better than 72% of comparison data.*

## Complexity...

- There are 5 process categories (CUS, ENG, SUP, MAN, ORG), 40 processes with 249 base practices and 9 attributes per process with approx. 4 management practices per attribute
- Each of the 5+40+1 (Total) views can be depicted as NPLF-Chart (for each of the 9 attributes) and as CL-Chart -> 460 different Charts for one assessment file...
- Assessment files can be classified:
  - By country (easily you will find 20 of them to classify)
  - By company size (let's distinguish 5 classes)
  - By industry sector (39 following the EAC key)
- This will lead to  $(20+5+39) \times 460 = 29.440$  Charts
- Additionally you could combine the classes:
  - E.g. only companies from Germany with size 10-51 from sector 27...
  - Will lead to  $20 \times 5 \times 39 \times 460 = 1.794.000$  Charts
- And each chart has a special meaning!  
(but not each chart will really be meaningful)

# Benchmarking Server Concepts (1)

- Data Definition Layer:
  - Defines the data you want to look at:  
Total, Categories, Processes, Attributes
- Chart Layout Layer:
  - Defines, how the data is evaluated and displayed.  
E.g. as NPLF or CL Charts
  - Additionally you would like to define: colour, texture, legend, title, resolution, orientation etc.
- Selection Criteria Groups:
  - Consists of several Selection Criteria, which define the query for selecting the data which will be evaluated. Here you define that only data from one or more defined classes (country, size, sector) is taken.

## Benchmarking Server Concepts (2)

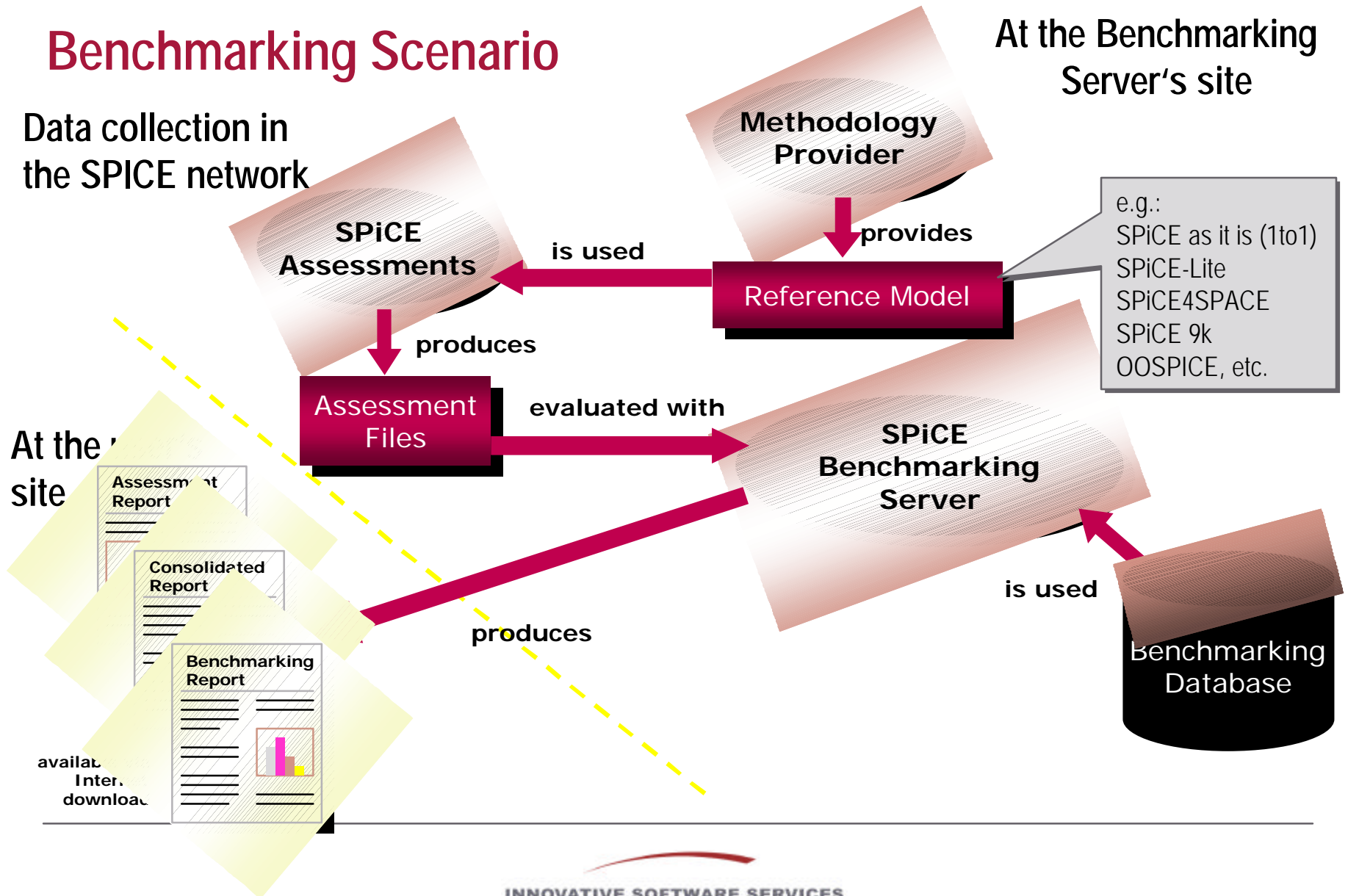
- Each chart now can be generated using the triple defined on the last slide (*Data Definition / Chart Layout / Selection Criteria Group*)
- The charts can be embedded into *Report Sections* which mainly consist of formatted text (with headings, explanations, legends, etc.)
- *Report Sections* are combined to *Reports*
- Depending on your user account, you can generate such a *Report* based upon the data you supplied or you can customize such a *Report* on your own
- The generation of the *Report* is fully *automated*
- The Benchmarking Server can store your *own evaluations*



# Benchmarking Scenario

Data collection in  
the SPICE network

At the Benchmarking  
Server's site



## How to use it – Scenario:

- Define your **objectives** internally – Why do you want to benchmark?
- Perform an assessment and enter the results into a data capturing tool (**SPiCE 1-2-1**) or the SPICE Network data collection suite
- Log on to the **SPiCE Benchmarking Server** (different portals)
- Upload the **assessment file(s)**
- Select the **evaluation criteria**
- Download the **Benchmarking Report** (HTML or PDF format)

## SPiCE Benchmarking Benefits

- You see where the others are
- You see those areas where you are ahead and where you will need to catch up
- You get a feeling for relevant and realistic goals, helping you to focus in comparison to competitors
- It helps you for changing your organisation  
(each improvement will need a change)
- Customer target: Your suppliers should be in the top 20%!

# SPiCE Benchmarking Future

- Benchmarking *Service* for SPiCE will be available very soon and will contain:
  - SPiCE bi-annual Benchmark Subscription
  - Evaluation for single and grouped assessment files
  - Benchmarking Report: Comparison with all or some special selected data
  - Do-It-Yourself access (ASP) for evaluating your own assessments
  - Access for SPiCE analysis group
- Benchmarking *Server* as in-house edition will be available
- Benchmarking *Service* for SPiCE-Lite (lightweight assessment) is available at <http://pics.arcs.ac.at/synbench>