

## **Certification of Intellectual Capital Statements – Quality Requirements for ICS**

Prof. Dr.-Ing. Kai Mertins  
Dipl.-Ing. Wen-Huan Wang  
Fraunhofer IPK Berlin, Germany  
[kai.mertins@ipk.fraunhofer.de](mailto:kai.mertins@ipk.fraunhofer.de)  
[wen-huan.wang@ipk.fraunhofer.de](mailto:wen-huan.wang@ipk.fraunhofer.de)

### **Abstract**

Managing 'intellectual capital' (IC) becomes increasingly vital for future-oriented organisations. The Intellectual Capital Statement (ICS) is an instrument to assess, develop and report organisation's IC and to monitor critical success factors systematically. It supports strategic management decisions. At present, the statements about IC are varied in structure and content. Resulting from increased interests in managing and reporting of IC, stakeholders such as creditors or investors will receive more and more ICS of totally different qualities - from very trustworthy to not at all believable.

To answer the question of 'How to ensure the quality of ICS in a sustainable way?', we develop an approach of ICS certification. It bases on the methods of quality management system certification, financial audit and the assessment for European Excellence Award. For ICS certification, a neutral third party will quality check the ICS beforehand and then audit the organisation on-site. In the end, only the ICS meeting the quality requirements will be rewarded a certificate.

However, a catalogue of requirements serves as the certification basis needs to be in place beforehand. The challenge is to determine the smallest possible amount of requirements that will ensure the ICS meeting the quality criteria: complete, plausible, verifiable, representative for the organisation and have a sustainable impact on IC management.

This paper summarises the crucial factors for a quality assured ICS as shown in the requirement catalogue. The catalogue is the essence of the guidelines from the German project 'Wissensbilanz – Made in Germany' and from the EU collective research project 'Intellectual Capital Statement (InCaS) – Made in Europe'. By using quality techniques such as failure mode and effect analysis (FMEA), we examine the ICS implementation procedure thoroughly for deriving the crucial minimum quality requirements. Furthermore, we include the experiences of ICS implementations in 50 German and 25 European small and medium-sized enterprises. The paper shows additionally how the catalogue can be applied both internally, as a quality assurance guide during the ICS creation, and externally, as a certification basis for ICS audits.

The benefits of ICS certification are: The company gets a quality check by a neutral external ICS auditor assuring that the ICS is of high quality level, in other words, the assessment outcomes and the measures are 'correct' and based on verifiable sources. Secondly, the company receives further improvement suggestions after a detailed on-site audit by an expert who is familiar with IC performances of other companies. Finally, a certified ICS has higher credibility for external stakeholders, such as investors, creditors and customers, since it is no longer a mere self assessment result.

### **Key Words**

Intellectual capital statement, quality management, quality requirements, certification audit, EU SME project

## 1. Introduction

Currently, the reports about IC are varied in structure and content (cf. Alwert 2006). Arising from increased interest in managing and reporting of IC, stakeholders such as creditors or investors will receive more and more ICS of totally different qualities - from very trustworthy to not at all believable. The European Commission PRISM report notes that in the field of audit, it appears that we are still far away from a consensus on how to audit innovative forms of reporting such as ICS (EC 2003). The ICS guideline by the Danish Ministry of Science, Technology and Innovation underscores that external verification is an additional opportunity to check the process' systematic approach and the external ICS' credibility (DMSTI 2003). Since there is no audit standard available for ICS (DATI 2000), the financial auditors usually check figures and texts that are in accordance with the auditing firm's guidelines when an audit is required (cf. DMSTI 2003). The RICARDIS report (EC 2006) states that audit for IC reporting can be particularly useful in:

- Measuring compliance with mandatory rules and regulations
- Identifying problems to solve and opportunities to seize
- Reducing risk
- Avoiding the cost of mistakes
- Providing reassurance to both financial and non-financial stakeholders

To meet these challenges, a methodology called "ICS auditing" has been developed at Fraunhofer IPK (Mertins, Wang, Will 2007). This method is found on both the experiences of various ICS realisations in Germany and Europe and the knowledge gained in quality and financial auditing and in assessment following the model of the European Foundation of Quality Management. (cf. EFQM 2007a).

The project "Intellectual Capital Statement (InCaS) – Made in Europe" aims to establish a European ICS guideline for implementing ICS (Mertins, Will 2007). Moreover, it deals with the question of sustainable quality assurance of ICS. In response to the needs for quality requirements as the foundation for ICS audits, a document called 'Module 7 of the European ICS framework - ICS quality requirements' for ICS certification has been developed (EC 2007). This paper shows the preliminary outcome of the research work within the InCaS project and at Fraunhofer IPK. The objectives of this paper are:

- To explore which quality assessment criteria will assure the objectives of ICS
- To identify which are the crucial factors with the most significant effect on ICS implementation success and
- To define the minimum quality requirements for an ICS audit.

In the next section, we show a selection of ICS guidelines for companies in Europe and their accompanying audit activities. We introduce briefly the InCaS / German methodology of ICS creation. Details of the methodology are explained in section 4 together with the quality requirements. We then provide further insight into the ICS auditing concept and outline our research method and the analysis techniques employed. Finally, we present the findings, venture possible implications of using the Module 7 for ICS certifications and conclude about the next steps for future research.

## 2. State of the art

### 2.1 ICS guidelines and accompanying audit activities

To develop a requirement catalogue for certifying ICS, we analyse numerous ICS guidelines for companies in Europe and the accompanying audit activities based on a comparative analysis of non-financial reporting frameworks by the OECD. Table 1 shows the guidelines for specific reporting about intellectual assets for companies in Europe (OECD 2006) and their accompanying audit activities.

**Table 1:** Selected ICS guidelines and accompanying audit activities (cf. OECD 2006)

Specific reporting about intellectual assets for companies in Europe (e.g. stand-alone reports on intellectual assets)				
Institution / country	Reference	Scope	Year*	Audit related notes or activities
European Union	Intellectual Capital Statements – Made in Europe, European ICS framework, (interim report) DG Research (EC 2007)	SME	2007	Module 7 – ICS quality requirements for ICS audits is part of the Framework.  An audit standard has been developed by Fraunhofer IPK (Mertins, Wang, Will 2007).  ICS audits will be carried out in 5 European countries within InCaS project by Fraunhofer Technology Academy
European Union	RICARDIS report, DG Research (EC 2006)	SME	2006	The report mentioned the importance of ICS audits.
European Union	Guidelines for Managing and Reporting on Intangibles, MERITUM Project (MERITUM 2002)	All companies	2002	There are companies offering certification services for this guideline.
Germany	Intellectual Capital Statements –Made in Germany, Federal Ministry of Economics and Labour (BMWA 2004)	SME	2004	Audit related activities are in progress.
Denmark	Intellectual Capital Statements –The new Guideline, Ministry of Science, Technology and Innovation (DMSTI 2003)	All companies	2003	External verification is an additional opportunity to check the process' systematic approach and the external ICS' credibility (DMSTI 2003). There are companies offering certification services for this guideline.
* Year of the latest version				

The ICS guidelines e.g. the Danish or the German guidelines are useful guidance for companies to know how to implement an ICS. For audit purposes, it is hard to use them as the certification basis, since guidelines include an overview of general ICS information, many explanations and mandatory and not mandatory activities for the company.

For the company as the auditee, it is very difficult to know following which requirements the auditor will examine the company and how to prepare for the audit. Bearing this in mind, we compile the ICS requirement catalogue (Module 7) with only must-have requirements and definitions. Non-compliance to the catalogue will lead to a denial of certificate. Table 2 explains the different ICS documents using the analogy to standards for quality management systems.

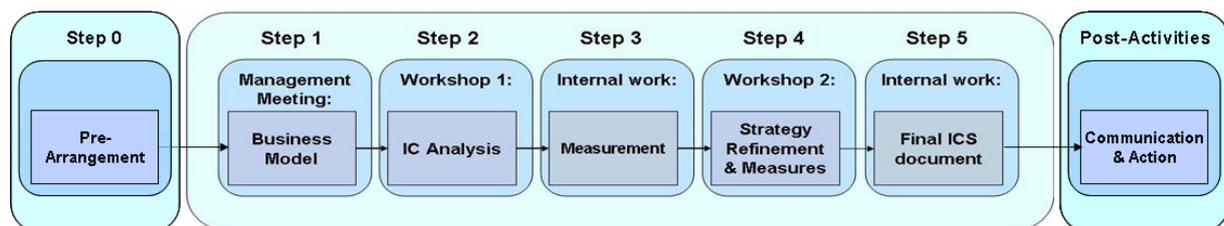
**Table 2:** Comparison of standards for quality management systems and ICS (InCaS approach)

Standards for quality management systems	Documents for intellectual capital statements	For what?
ISO 9004 Quality management systems - guidelines for performance improvements (ISO 2000b)	InCaS Intellectual Capital Statements - framework (EC 2007)	Guidance for implementing ICS
ISO 9001 Quality management systems – requirements (ISO 2000a)	InCaS ICS framework Module 7 Intellectual Capital Statements – quality requirements (EC 2007)	Basis of certification (what to audit)
ISO 19011 Guidelines for quality and/or environmental management systems auditing (ISO 2002)	Guidelines for ICS auditing	Guidance for conducting ICS audits (how to audit)

In the next sections, we refer to the document “InCaS Module 7 ICS – Quality requirements” as the “requirement catalogue”.

## 2.2 ICS implementation process of InCaS

The InCaS project uses an approach based on the German ICS methodology (cf. BMWA 2004; Mertins, Alwert, Heisig 2005). The InCaS guideline describes the structure and basic content of the ICS as well as the general model and the creation procedure of the ICS. Within the creation process, the organisation analyses, assesses and documents three dimensions of IC: human capital, structural capital and relational capital (EC 2007). Figure 1 shows the ICS procedural model of InCaS.



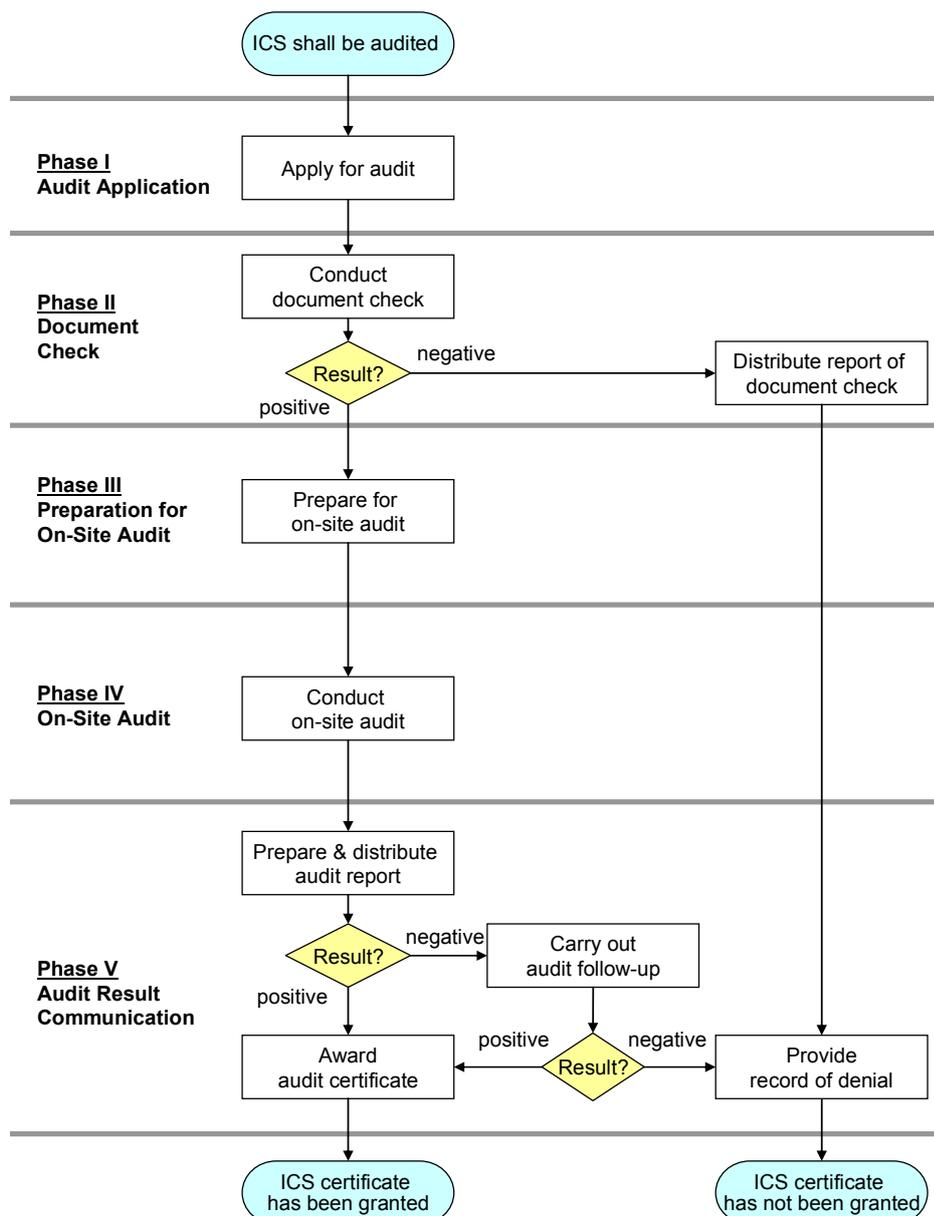
**Figure 1:** ICS procedure model of InCaS

The procedure of generating an ICS is divided into five steps with each step building on the prior one. Step 1, 2 and 4 are accomplished with the support of ICS moderators. Step 3 and 5 are prepared internally without direct participation of an ICS moderator on-site. We examined the respective steps in detail concerning necessary quality requirements in the section 4.1.

### 3. ICS certification process

For the development of the ICS certification methodology (figure 2) customized to the InCaS / German approach, three common auditing approaches are partially applicable and are considered in detail (Mertins, Wang, Will 2007):

- for quality management systems the “ISO 19011 - Guidelines for quality and/or environmental management systems auditing” (cf. ISO 2002),
- for EFQM application for European Excellence Award the “Guidelines for the Excellence Award Applicants” (cf. EFQM 2007b),
- for financial auditing the German guideline “Rechnungslegungs- und Prüfungsgrundsätze für die Abschlussprüfung” (cf. IDW 2006).



**Figure 2:** ICS certification process

The recommended time for carrying out an ICS audit is approximately one month after the ICS completion. The duration of the audit depends on the size, complexity and number of locations of the organisation to be audited (auditee). In general, on-site audit should last approximately one day but the duration increases with the number of locations.

## 4. Quality requirements for ICS

### 4.1 Approach

In the last many years a number of recognised quality assessment criteria have been developed for financial statements. They are also relevant for the ICS and can be used to increase the coherence and quality of ICS (DATI 2000). More important, these quality criteria shall support the fundamental purposes of ICS. Therefore, a verified ICS will be more credible and more effective for IC management, as well. Since we apply audit as the valuation method, the defined quality criteria have to be easily auditable. Considering these preconditions, we classified five basic quality assessment criteria for auditing ICS in accordance to InCaS / German procedure:

- completeness according to the requirement catalogue
- plausibility,
- verifiability,
- representative for the organisation and
- sustainable regarding impact on IC management of the organization.

Figure 3 presents the relationship between the defined quality criteria and the ICS objectives.

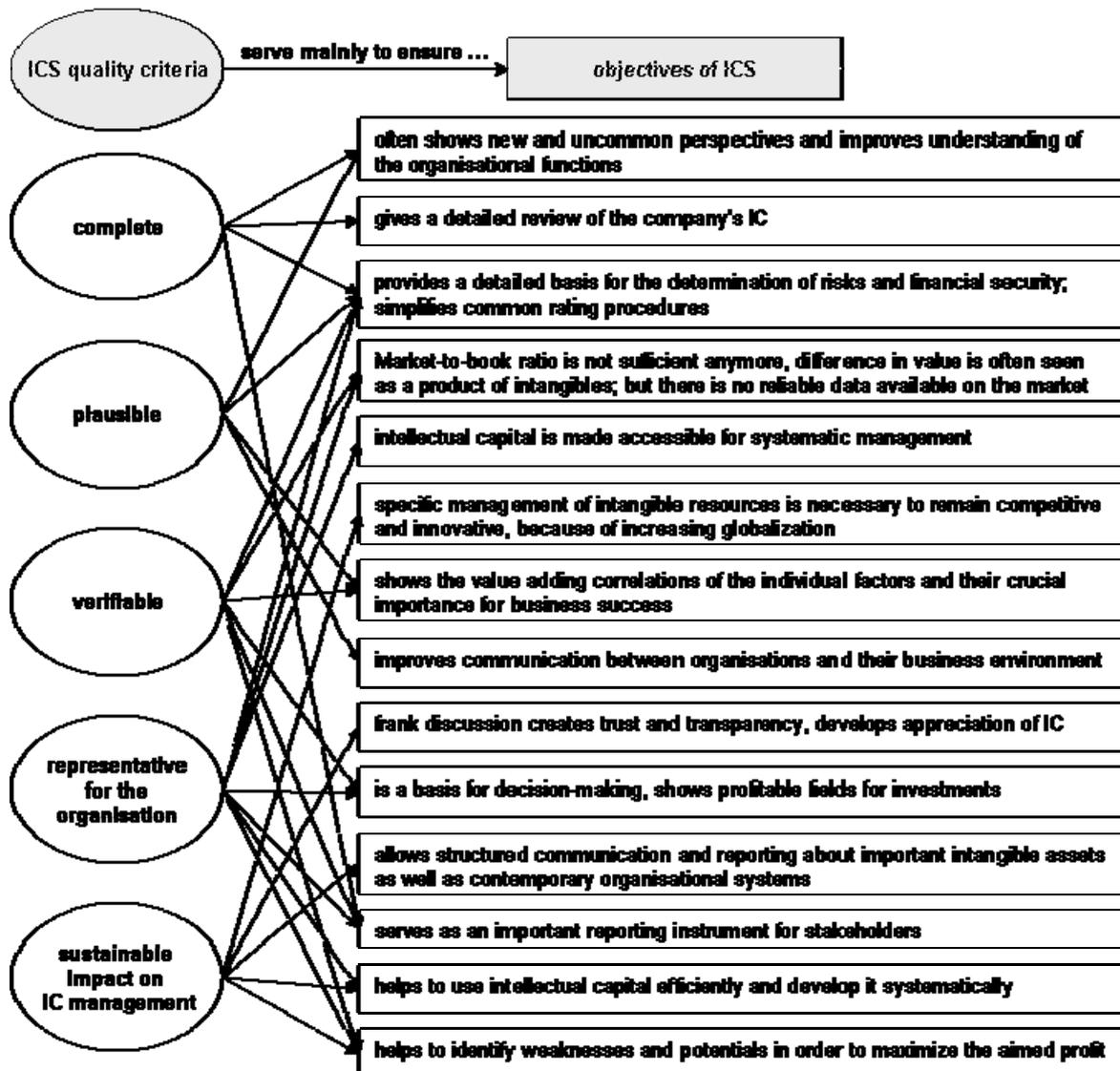


Figure 3: Objectives of ICS (cf. Alwert 2006) and the supporting quality criteria

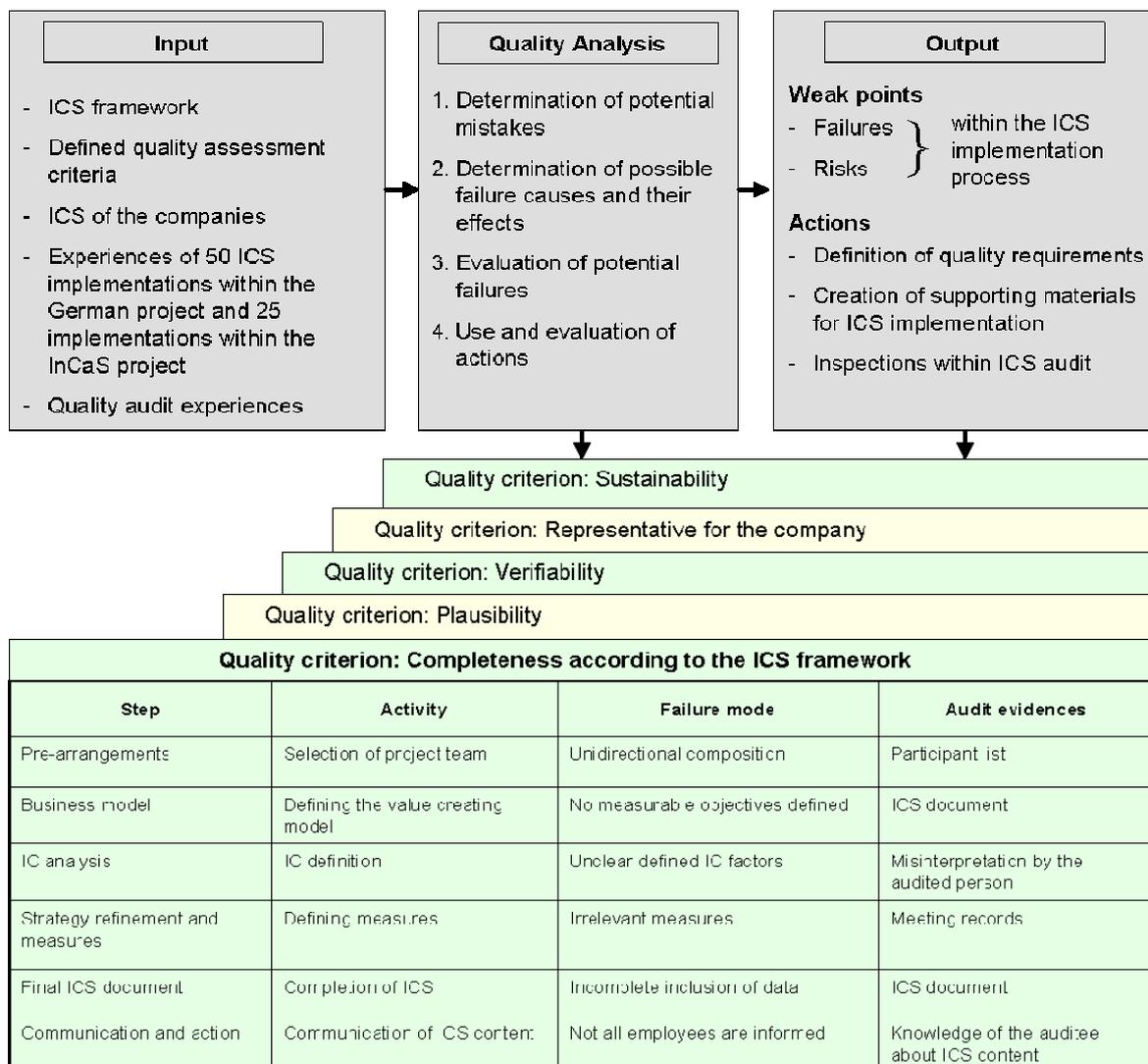
Table 3 shows how the nine quality criteria for the financial statement will be checked by the defined five ICS quality criteria. By contrast with the criteria for financial statement, we added the criterion “sustainability” to highlight the importance for ICS in having sustainable impact on IC management.

**Table 3:** Quality criteria for the financial statement (DATI 2000) and quality criteria for ICS of InCaS

Quality assessment criteria recommended by the Danish Guideline (2000)		Will be checked by the InCaS quality criteria
Relevance	All information of <b>relevance</b> to decision-making by the users of the ICS must be incorporated in the reporting.	<b>Completeness</b> according to the requirements about ICS content
	In an ICS, the relevance criterion demands a <b>logical relationship</b> between the figures or the measurements on the one hand and the knowledge narrative, the management challenge and the actions on the other. This will enable a reader to decide whether the knowledge narrative has been formulated in a reasonable manner, and whether it has regard for the reader’s perception of what the company’s knowledge narrative ought be like.	<b>Plausibility</b>
Reliability	The reported information must allow for <b>verification</b> . Disclosure of the accounting policies makes it possible to trace a particular figure to its original source and check whether it is correct.	<b>Verifiability</b>
	The knowledge narrative and the management challenges can only be “verified” by testing <b>their coherence and their consistency</b> .	<b>Plausibility</b>
Clarity	The ICS must be clearly structured and easy to read. It must also satisfy a need for coherence in juxtaposing text, figures and illustrations. Essential information must not be engulfed by other information that will distract the attention of the reader from relevant issues. The ICS must pursue one line of thought.	<b>Completeness</b> according to the requirements about ICS structure and clarity
Materiality	All IC items must be included unless they are insignificant. Figures and measurements that for reasons of the knowledge narrative and in the management challenges are important to the company must be included, yet the volume of details should be kept down. Including too many figures is often a risk, especially if they tend to illustrate the same points.	<b>Completeness</b> according to the requirements about content and quantity of IC factors
Completeness	The reported figures must provide a full and <b>complete</b> view of the company’s situation. The ICS must include figures illustrating the company’s <b>actions</b> . These should illustrate key issues and not subordinate aspects.	<b>Completeness</b> according to the requirements about ICS content and actions
Substance	Real issues, not formality without substance, are the points of concern. The ICS must include information of <b>importance</b> to understanding the particular company’s knowledge management, rather than produce figures and measurements according to a model that is at variance with the company. The figures and measurements must be compatible with the company’s current type of management.	<b>Completeness</b> according to the requirements about ICS content
		<b>Representative</b> for the company
Gross measurements	All <b>measurements</b> must be reported separately. No two indicators must be added together for the risk of blurring tendencies. However, developing indices from different measurements is allowed as long as this is not done to conceal less impressive results.	<b>Plausibility</b>  No requirements about addition of indicators.

Quality assessment criteria recommended by the Danish Guideline (2000)		Will be checked by the InCaS quality criteria
Neutrality	All relevant measurements must be stated as <b>objectively</b> as possible, regardless of their impact on the overall view of the company. Indeed there can be no manipulating results, or leaving out relevant facts or figures merely because they project an undesirable picture of the company's efforts in knowledge management.	<b>Completeness</b>
		<b>Representative</b>
		<b>Plausibility</b>
		<b>Verifiability</b>
Comparability	The information must allow <b>comparison</b> from one year to the next. There can thus be no changing of the accounting period, layout, database or method of measurement, except to improve the quality of the ICS. <b>Continuity</b> is required in these statements in order to explain and communicate the company's development over time. Time series are especially important. The accounting policies must also be disclosed.	<b>Completeness</b> according to the requirements about ICS implementation process, (e.g. QQS assessment).  No requirement about accounting policies.
No similar criteria mentioned		<b>Sustainability</b>

Following the ICS quality criteria, we questioned the ICS implementation process and the ICS content thoroughly in order to reveal the crucial factors for a successful ICS implementation. Figure 4 shows a simplified overview of the quality analysis of ICS implementation.



**Figure 4:** Quality analysis of ICS implementation

Specifically, we employed two quality techniques for further analysis, the cause-and-effect diagram and the failure modes and effects analysis (FMEA). The cause-and-effect diagram analyzes potential causes of a defect, error or problem of a process under identification (cf. Pfeifer 2002). Figure 5 exemplifies a diagram with the factors influencing the ICS implementation process and the ICS content in regard of the quality criterion “completeness”.

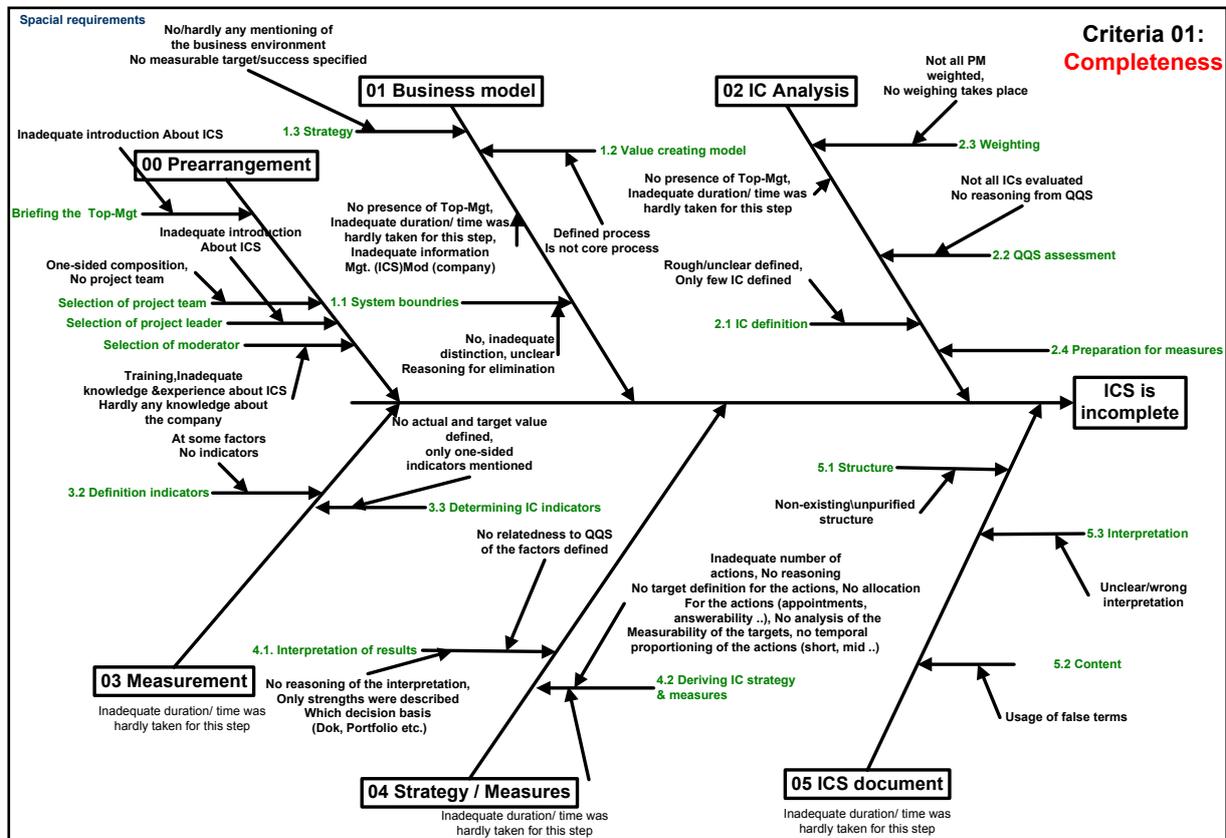


Figure 5: Cause-and-effect diagram for the quality criterion ‘completeness’

There are a number of standards suitable for performing FMEA (cf. Prefi 2007). For our application we selected the proceeding of EN 60812 (DIN 2006) with significant modification to its FMEA templates. The findings of the cause-and-effect diagram contributed as input for the FMEA analysis, table 4.

**Table 4:** FMEA for two failure modes of ICS implementation

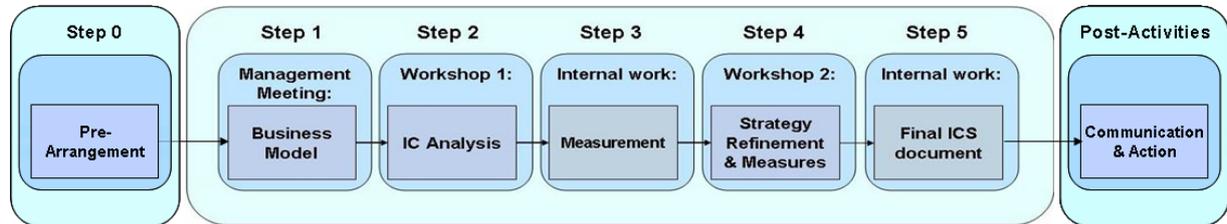
Analysis							Actions	
Failure mode	Cause	S	O	D	RPN	Risk	Quality requirement	Check at the audit
<b>Step 2: IC Analysis</b>								
Some workshop participants state no representative QQS assessment result	Low knowledge about the perception of the other employees	8	6	4	192	high	Selection of project members: The ICS project members have an overview of the colleagues' perceptions in his/her organizational unit.  The QQS assessment results shall be reasoned and discussed within the group	QQS Cross Check
<b>Step 5: Final ICS document</b>								
Employee inserts incorrect numbers for some indicators	Lack of attention of the employee	7	3	2	42	low	No direct requirements.  The top management affirms the representative and correct the characters of the ICS by signing it.	Random check of data source
S: Severity ranking of the cause (low 1 – 10 high) O: Occurrence ranking of the cause (low 1 – 10 high) D: Detection ranking (high 1 - 10 low) RNP: Risk Priority Number = S * O * D								

The information about which failure modes are most likely to affect the ICS implementation gave us guidance in defining quality requirements. In addition, it assisted us in defining checking methods and desired audit evidences within the ICS audit.

For the development of the requirement catalogue, the aim was to minimize the requirements for the ICS implementation to allow great latitude for the companies in creating their ICS. We decided only on process requirements when it was impossible to specify adequately the product without doing so (cf. ISO 1994). The catalogue is an essence of the guidelines from the German project (BMW 2004) and from the EU InCaS project (EC 2007).

## 4.2 Results

The requirement catalogue specifies quality requirements for ICS that can be used for internal application within organizations and/or for certification. It focuses on the quality of the ICS for external reporting, the ICS creation process and the sustainable impact of the ICS (cf. figure 6). We present a selection of the requirements as follows (cf. EC 2007). The documentation required for ICS audits are: the ICS itself and records providing evidence of conformity to the quality requirements.



**Figure 6:** ICS procedure model of InCaS

### ICS Implementation Process

All participants in the ICS implementation process and their respective roles are documented for every step of the implementation.

#### Step 0 – Pre-Arrangement

In small and medium sized organizations, the project team consists of members from all organizational units and hierarchy levels concerning the main business processes. These members have an overview of the colleagues' perception and speak on their behalf. Furthermore, ICS project leader, moderator and keeper of the minutes are competent on the basis of appropriate education, training, skills and experience.

#### Step 1 – Business Model

The organization defines the system boundaries as clearly as possible and documents them carefully in order to avoid misunderstandings. For boundaries which are different from the whole organization, reasons for the exclusions are stated. The organization describes its created value (what is offered to customers) and identifies the related value adding business processes. The business model is verifiable and plausible. In order to give a broad strategic direction of the company, the organization defines the main strategic objectives including external business environment and main business success factors. The top management is present in this step.

#### Step 2 – IC Analysis

The IC analysis shall be carried out in a workshop and is broken down into three major parts: IC factor definition, QQS-Assessment and Weighting (Impact Scoring). The participants determine the most important IC factors (3-5 factors per IC category) and adjust the definitions to company's specific needs. The definitions of IC factors are representative for the organization and do not conflict with the definitions of the common IC factors (cf. table 5).

**Table 5:** Definition of common IC factors – excerpt

Human Capital	
IC Factor	Definition
Professional competence	The expertise gained within the organization or in the employee’s career: professional training, higher education, training courses and seminars, as well as practical work experiences gained on-the-job
Social competence	The ability to get on well with people, communicate and discuss in a constructive manner, nurturing trust-enhancing behaviour in order to enable a comfortable cooperation. Furthermore the learning ability, the self-conscious of critique and risks as well as the creativity and flexibility of individual employees are embraced in term ‘social competence’.

The participants score all IC factors regarding their performance in quality/quantity and systematic management (QQS). The reasons and evidences for the QQS assessment results are documented. The participants score the impacts of all IC factors relating to their impact on business success. In addition, the reasons and evidences for the impact scoring results are documented.

At the workshop, each participant represents a specific organizational unit and speaks on its behalf. Each statement has the same weight regardless of the position of the person. The IC analysis results (QQS and impact Scoring) reflect the status quo of the organization and can be confirmed by the employees. If there are significant differences between the participants, the reasons shall be assessed and documented (cf. table 6). The justifications for the IC analysis results are verifiable.

**Table 6:** Example minutes for QQS assessment

ID	IC Factor	How much?		Reasoning (example)	Guide for minute taking
Human Capital	Professional competence	Do we have enough qualified employees to achieve our strategic objectives?	60	<p>30, 60, 60, 90, 60</p> <p>Professional competence in general is quite good. Majority is highly qualified.</p> <p>Several employees with long term experiences in XXX, with the qualification of XXX.</p> <p>But temporary workers are often not enough qualified. More professionals needed.</p>	<p>Single assessment results of the participants.</p> <p>Document the reasoning why the IC factor has been evaluated so low/high.</p> <p>Document mentioned evidences.</p> <p>The moderator shall ask for facts which support the assessment.</p> <p>Especially when a significant difference of &gt;40% between two single results emerges, their reasons shall be documented in detail.</p>

**Step 3 – Measurement**

The organization determines IC indicators for at least 50% of the most important IC factors according to the impact analysis. The reasons for the IC indicator selection are documented. The determined IC indicators have definitions which are consistent with the definitions of standard IC indicators and cover the basic indicators stated in the requirement catalogue (cf. table 7). The IC factors are:

- useful concerning the business model, strategy and their specific measures for IC development,
- appropriate to measure a particular IC factors and
- verifiable.

**Table 7:** List of standard IC Indicators – excerpt

Human Capital				
IC Factor	Name of Indicator	Unit	Definition and Calculation	Basic Indicator
Professional Competence	Total number of employees (including apprentices)	Number	Number of employees the SME had in the last accounting year. Every employee should count as “full head” irrespectively his/her actual working hours	√
	Employees with university degree	Number	Number of employees with university degree the SME had in the last accounting year	√
	Days used for further qualification	Number	Total number of days used for further qualification (e.g. additional university courses, off-the-job training) in the last accounting year	√
	Employees’ average age	Year	Total sum of employees’ age/ Total number of employees (without apprentices)	√

**Step 4 – Strategy Refinement & Measures**

The participants interpret the results of the IC analysis in a way, which represents the perception of the employees. The result interpretations (causes for strengths and weaknesses) are documented. If there are major differences between the workshop participants, the reasons shall be assessed and documented. The evaluation of the status quo concerning strengths and weaknesses

- is plausible
- is verifiable
- is representative for the organization
- includes areas of strengths and weaknesses

The participants adjust the IC strategy based on the results and analyse the major potentials for improvement and related measures plausibly. The organization derives major potentials for improvement and at least 3 numbers of measures (1 for each term).

- Short term: due date less than 3 months
- Medium term: due date less than 1 year and
- Long term: due date longer than 1 year

The planning of measures includes objective of the measure, responsibility, due date and value of IC indicators to be achieved.

**Step 5 – Final ICS Document**

The results of the ICS implementation are presented in the final ICS document following the given structure. The information stated in the ICS is:

- relevant, actual,
- in reasonable detail,
- presented in a clear way and
- plausible and representative

The top management affirms the representative character of the ICS by signing it.

**Post Activities**

The organization communicates and explains the ICS content internally so that it is understood by the employees. Defined short and midterm measures are planned or/and in realisation. Defined measures are to be implemented within deadline. The development of the IC indicators relevant for the measures is monitored in a reasonable interval. The organization assesses the effectiveness of implemented measures. In case of irregularity, further suitable measures shall follow.

## 5. Discussion and conclusion

The certification of ICS in compliance with the requirement catalogue has the following objectives as benefits for the companies:

- The company gets a quality check by a neutral external ICS auditor assuring that the ICS is of high quality level, in other words, the assessment outcomes and the measures are 'right' and based on verifiable sources.
- The company receives further improvement suggestions after a detailed on-site audit by an expert who knows the IC performance of other companies.
- A certified ICS is not a pure self assessment result anymore and has a higher credibility for external stakeholders such as investor, creditor and customer.

Furthermore, if ICS fulfil some requirements about structure, content and length (cf. Wuscher, Will, Alwert, Bornemann 2006), it contributes to a more homogeneous rating of SMEs than analysts' assessment based solely on information from annual financial reporting. Therefore, it reduces risks for both banks and SMEs (cf. Alwert, Bornemann, Will 2007). Herrmann notes that an audit is a special form of an examination at which an auditor can determine to what extent the audited object meet the requirements to this object. The audited object can be a product, a process or a system. The basic prerequisite is: the auditors must not be organizationally attached to the audited organisation and has to be independent. In this case, the audit is a well-proved and effective management instrument (cf. Herrmann 2007).

However, following the experiences of auditing for quality management systems, Lobinger indicates that audit is a difficult task. The auditor is supposed to both examine and to identify improvement potentials by the employees' collaboration. The employees often only see the examination character and become afraid of talking about weaknesses to avoid risking a non-conformance (cf. Lobinger 2002). At the ICS audits, the employees do not need to be afraid of that. The objective of an ICS is to find out the real status quo of the IC of the organisation for an effective IC management. The employees are supposed to be honest and to tell their perceptions. At the worst case, in which the ICS audit comes to the conclusion that the written ICS does not reflect the company's IC performance, the company would still have the opportunity to correct the ICS with the help of the audit report. Therefore, prior to the audit the executives shall broadly communicate the purpose and character of the audit. In case of a denial of the ICS certificate even after correction, the company can redo the ICS and apply for the next audit. The earliest date to do this is one month after completion since the new defined short term measures shall be implemented at the audit.

Including quality assurance activities early in the implementation is an efficient way to enhance the quality of the outcomes. For this reason, we recommend the companies to use the requirement catalogue internally for preparation and quality checks during the ICS creation. Apart from the benefit for the companies, the effects of the ICS certification on the ICS methodology in the long run are:

- to ensure the proper application of the European ICS guidelines,
- to encourage sustainable usage of ICS as an internal management tool by checking the progress of realisation measures and
- to facilitate ICS comparability by promoting completeness of ICS,
- to ensure the reliability of ICS so that e.g. creditors will consider this information as an important input for their rating decisions,
- to establish the reputation of ICS as a trustworthy document and
- to consolidate the ICS as a valuable management tool, since greater acceptance by stakeholder will trigger further use of the method.

The next steps for the ICS audit methodology are the ICS implementations according to the requirement catalogue by the pilot SME within the InCaS project. After that, we will conduct ICS certifications at selected pilot SMEs. The outcome of the ICS audits will contribute valuable information for enhancing the ICS requirement catalogue and the ICS certification method.

## References

- Alwert, K. (2006) Wissensbilanzen für mittelständische Organisationen, Fraunhofer IRB, Stuttgart
- Alwert, K.; Bornemann, M.; Will, M. (2007) "Does Intellectual Capital Reporting Matter to Financial Analysts?", Paper read at the 8th European Conference on Knowledge Management, Barcelona
- BMWA (Federal Ministry of Economics and Labour) (eds) (2004) *Intellectual Capital Statement – Made in Germany. Guideline*, [online], Berlin, <http://www.bmwi.de/Navigation/Technologie-und-Energie/Informations-gesellschaft/tagung-wissensbilanz,did=41128.html>
- DATI (Danish Agency for Trade and Industry) (2000), A Guideline for Intellectual Capital Statements: A Key to Knowledge Management, Copenhagen
- DIN (2006) DIN EN 60812:2006 - Analysis techniques for system reliability – Procedure for failure mode and effects analysis (FMEA), Beuth, Berlin
- DMSTI (Danish Ministry of Science, Technology and Innovation) (2003) *Intellectual Capital Statements – The new Guideline*, [online], Copenhagen, [http://videnskabsministeriet.dk/site/forside/publikationer/2003/intellectual-capital-statements---the-new-guideline/guideline\\_uk.pdf](http://videnskabsministeriet.dk/site/forside/publikationer/2003/intellectual-capital-statements---the-new-guideline/guideline_uk.pdf)
- EFQM (2007a) *European Foundation for Quality Management* [online] <http://www.efqm.org>
- EFQM (2007b) Guidelines for the Excellence Award Applicants
- EC (European Commission) (2003) *THE PRISM REPORT 2003*, Report Series No. 2, October 2003, [online] [http://www.euintangibles.net/research\\_results/FinalReport.pdf](http://www.euintangibles.net/research_results/FinalReport.pdf)
- EC (European Commission) (2006) *Reporting Intellectual Capital to Augment Research, Development and Innovation in SMEs (RICARDIS)*, [online] [http://ec.europa.eu/invest-in-research/pdf/download\\_en/2006-2977\\_web1.pdf](http://ec.europa.eu/invest-in-research/pdf/download_en/2006-2977_web1.pdf)
- EC (European Commission) (2007) *Adapted European ICS Framework*, interim project report, not published yet
- Lobinger, W. (2002) „Auditprozess im Wandel: Die neuen Managementsysteme erfordern neue Ansätze im Auditwesen“, in: *Qualität und Zuverlässigkeit*, Vol 47, No. 8, pp. 780-781
- Herrmann, J. (2007) "Audit", in: Pfeifer, T.; Schmitt, R., Masing, W. (eds) *Masing Handbuch Qualitätsmanagement*, 5. edition, Hanser, Munich, pp 331-341
- IDW PS 201 (2006) Rechnungslegungs- und Prüfungsgrundsätze für die Abschlussprüfung, in: *WPg* 2006, pp. 850 ff., No. 13/2006, 18.05.2006
- ISO (1994) ISO/IEC Guide 7: Guidelines for drafting of standards suitable for use for conformity assessment, Beuth, Berlin
- ISO (2000a), DIN EN ISO 9001:2000 Quality management systems – Requirements, Beuth, Berlin
- ISO (2000b) DIN EN ISO 9004:2000 Quality management systems – Guidelines for performance improvements, Beuth, Berlin
- ISO (2002), ISO 19011:2002 Guidelines for quality and/or environmental management systems auditing, Beuth, Berlin
- MERITUM (2002) *Guidelines for Managing and Reporting on Intangibles (Intellectual Capital Report)*, Vodafone Foundation, Madrid, [online] <http://www.uam.es/proyectosinv/meritum/Link%20Guidelines%20Meritum/version%20inglesa%20completa.pdf>

Mertins, K., Alwert, K., Heisig, P. (eds.) (2005) *Wissensbilanzen – Intellektuelles Kapital erfolgreich nutzen und entwickeln*, Springer, Berlin

Mertins, K.; Wang, W.-H.; Will, M. (2007) "How to Ensure the Quality and Reliability of Intellectual Capital Statements?", [online] in: *The Electronic Journal of Knowledge Management* Volume 5 Issue 4, pp 437 – 448, [http://www.ejkm.com/volume-5/v5-i4/Mertins\\_et\\_al.pdf](http://www.ejkm.com/volume-5/v5-i4/Mertins_et_al.pdf)

Mertins, K.; Will, M. (2007) "A Consistent Assessment of Intellectual Capital in SMEs. InCaS: Intellectual Capital Statement – Made in Europe", [online] in: *The Electronic Journal of Knowledge Management*, Volume 5 Issue 4, pp. 427 – 436, [http://www.ejkm.com/volume-5/v5-i4/Mertins\\_and\\_Will.pdf](http://www.ejkm.com/volume-5/v5-i4/Mertins_and_Will.pdf)

OECD (2006) "Intellectual assets and value creation: implications for corporate reporting", Paris

Pfeifer, T. (2002) *Quality Management – Strategies, Methods, Techniques*, Hanser, Munich

Prefi, T. (2007) "Qualitätsmanagement in der Produktentwicklung", in: Pfeifer, T.; Schmitt, R., Masing, W. (eds) *Masing Handbuch Qualitätsmanagement*, 5. edition, Hanser, Munich, pp 405-433

Wuscher, S.; Will, M.; Alwert, K.; Bornemann, M. (2006): „Wissensbilanz – Made in Germany - Projektstudie über weiche Faktoren als Teil der Unternehmenseinschätzung durch Kapitalgeber“, Recent study by Fraunhofer IPK, Berlin. [online] [http://www.akwissensbilanz.org/Infoservice/Infomaterial/061214\\_Finanzmarkt\\_Wirkungstest\\_Teil1\\_V16.pdf](http://www.akwissensbilanz.org/Infoservice/Infomaterial/061214_Finanzmarkt_Wirkungstest_Teil1_V16.pdf)