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Integrated Reporting and Intellectual Capital
– Concepts and Possible Solutions

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# Introduction and Outline

Information is at the heart of the definition of Intellectual Capital. The more information we have, the better is the basis for decision making. However, the information has to be „useful“, otherwise the cry for „information overload“ continues. Information overload is not a new term. Even when annual reports were less than 100 pages, the search for useful information was an objective for various committees formed over the years to balance and satisfy information needs of regulators, investors and other stakeholders.

Global information in electronic formats has changed the landscape of business reporting for large as well as small companies. This new wave and form of information has forced and requested renewed pressure to combine financial and non-financial disclosures and reporting standards.

Besides financial information, large amounts of other data are available to judge the performance of a business. For financial information, the International Financial Reporting Standards (IFRS) and International Public Sector Standards (IPSAS), on a global scale, are applied to bring information into the same formats. The standard setting for non-financial information is in infant stages and no predominant framework has yet been identified for reporting business performance in a simplified and structured manner.

The un-coordinated approach to provide comprehensive business information led to a call to integrate financial and non-financial business reporting. In August 2010, the International Integrated Reporting (Committee) Council (IIRC) was formed to create a framework for accounting for sustainability, bringing together financial, environmental and social and governance information into an „integrated“ format.

The IIRC defines Integrated Reporting as the language evidencing sustainable business. It is the means by which companies communicate how value is created and value will be enhanced over the short, medium and long term (see IIRC [2012b], p. 1).

This definition relates closely to the definition of Intellectual Capital, which is the value of a company or organization’s employee knowledge, business training and any proprietary information that may provide the company with a competitive advantage. Intellectual Capital can broadly be defined as the collection of all intangible resources a company has at its disposal. Intangible resources are all resources being not physical and not financial. They are, e.g., what people use to drive profits, gain new customers, create new products, or otherwise improve the business.

The purpose of this chapter is to provide an overview of the status of the Integrated Reporting framework, examine the segmentation value of the six capitals, the current status to organize data collection and assurance and to suggest concepts and possible solutions leading to a paradigm shift to increase the power of Intellectual Capital.
2 Integrated Reporting (IR)

2.1 The International Integrated Reporting Council (IIRC)

The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. Together, this coalition shares the view that communication about businesses’ value creation should be the next step in the evolution of corporate reporting. The IIRC was formed in August of 2010 in the United Kingdom by the Accounting for Sustainability Project (A4S) and the Global Reporting Initiative (GRI).

The structure of the IIRC includes a board, a council, working groups, technical task forces, ambassadors, a secretariat and committees (see IIRC [2013a]). A pilot program, with over 80 global companies from 22 countries and a variety of sectors guarantees a strong connection to test the framework in a real company environment (see IIRC [2013b]). Details about the need for Integrated Reporting (IR), making things happen for IR and key miles are listed on the IIRC website (see IIRC [2012a]).

The first step towards the development of an integrated business reporting framework was the publication of a discussion paper in 2011 resulting in a release of a Prototype Framework in November 2012. The further timetable calls for a draft framework to be issued by April 2013, followed by a final „version 1.0” in December 2013. The IIRC is also planning to publish subsidiary papers on a range of topics during early 2013 (see IIRC [2013c]). These topics are likely to include connectivity, the business model, the capitals, the concepts of value and materiality.

2.2 The IR Discussion Paper and Prototype Framework

The IR Discussion Paper, published in September 2011, was the first step in the development of an ‘International Integrated Reporting Framework’. It seeks to build on existing developments in reporting such as the international convergence of accounting standards, sustainability guidance published by organizations such as the Global Reporting Initiative (GRI), the IASB’s IFRS Practice Statement „Management Commentary” and PwC’s „Value Reporting”.

The core of the IR Discussion Paper, a 29 page document, focuses on key definitions, outlining IR building blocks and sketching the future direction of the project (see IIRC [2011] as well as Haller/Fuhrmann [2012], pp. 461). Designed as an initial exposure of the project, 214 responses and comments from a wide stakeholder group were received (for details (see IIRC [2012a]).

The 51 page Prototype Framework was published November 26, 2012. It contains the following guidance:
1. OVERVIEW

2. FUNDAMENTAL CONCEPTS
   A. Introduction
   B. The capitals
   C. The business model
   D. Creating value

3. GUIDING PRINCIPLES
   A. Strategic focus and future orientation
   B. Connectivity of information
   C. Stakeholder responsiveness
   D. Materiality and conciseness
   E. Reliability
   F. Comparability and consistency

4. CONTENT ELEMENTS
   A. Organizational overview and operating context
   B. Governance
   C. Opportunities and risks
   D. Strategy and resource allocation plans
   E. Business model
   F. Performance and outcomes
   G. Future outlook

5. PREPARATION AND PRESENTATION
   A. Disclosure of material matters and the materiality determination process
   B. Frequency of reporting
   C. Time frames for short, medium and long term
   D. Reporting boundary
   E. Aggregation and disaggregation
   F. Involvement of those charged with governance
   G. Use of technology
   H. Assurance
   I. Other considerations

GLOSSARY

APPENDICES
   A. Other IIRC publications and resources
   B. Basis for conclusions

(Source: IIRC [2012c], p. 2)

„The fundamental concepts underpinning IR revolve around the various capitals that the organization uses and affects, the organization’s business model, and the creation of value over time. These concepts, which are discussed in Chapter 2, and the reporting requirements and guidance in Chapters 3-5 are mutually reinforcing. An organization’s business model is the vehicle through which it creates value. That value is embodied in the capitals that it uses and affects” (IIRC [2012c], p. 4, No. 1.7 and 1.8).
2.3 The six capitals as a possible segmentation for organizing and reporting data

In the glossary of the Prototype Framework capitals are defined as „stores of value on which all organizations depend for their success as inputs, in one form or another, to their business model, through which they are increased, decreased or transformed. The capitals identified in this Framework are: financial, manufactured, human, intellectual, natural, and social and relationship“ (IIRC [2012c], p. 49). The capitals are sometimes also referred to as „resources and relationships“ (IIRC [2012c], p. 8).

The six capitals are categorized and described in the IIRC Prototype Framework as follows (Source: IIRC [2012c], pp. 11-12):

**Financial Capital** – The pool of funds that is:
- available to the organization for use in the production of goods or the provision of services.
- obtained through financing, such as debt, equity or grants, or generated through operations or investments.

**Manufactured Capital** – Manufactured physical objects (as distinct from natural physical objects) that are available to the organization for use in the production of goods or the provision of services, including:
- buildings.
- equipment.
- infrastructure (such as roads, ports, bridges and waste and water treatment plants).

**Human Capital** – People’s skills and experience, and their capacity and motivations to innovate, including their:
- alignment with and support of the organization’s governance framework and ethical values such as its recognition of human rights.
- ability to understand and implement an organization’s strategy.
- loyalties and motivations for improving processes, goods and services, including their ability to lead and to collaborate.

**Intellectual Capital** – Intangibles that provide competitive advantage, including:
- intellectual property, such as patents, copyrights, software and organizational systems, procedures and protocols.
- the intangibles that are associated with the brand and reputation that an organization has developed.

**Natural Capital** – Natural Capital is an input to the production of goods or the provision of services. An organization’s activities also affect, positively or negatively, on Natural Capital. It includes:
- water, land, minerals and forests.
- biodiversity and eco-system health.

**Social and Relationship Capital** – The institutions and relationships established within and between each community, group of stakeholders and other networks to enhance individual and collective well-being. Social and Relationship Capital includes:
- common values and behaviors.
• key relationships and the trust and loyalty that an organization has developed and strives to build and protect with customers, suppliers and business partners.
• an organization’s social license to operate.

3 Intellectual Capital as a bridge between Financial and Non-Financial Reporting

3.1 Three Simple Capitals

The prototype framework states that the categorization and description of the six capitals continues to be considered. “While it is likely the categorization will remain unchanged, it is also likely that the descriptions will be refined” (IIRC [2012c], p. 11).

Intellectual Capital is normally classified into Human Capital, Structural Capital and Relational Capital. The six IIRC Capitals are overlapping (Human, Social and Relationship Capital; Manufactured and Natural Capital) and the IIRC separate stated category „Intellectual Capital” is included in all six categories. Intellectual Capital is difficult to value as reflected in the current mixed attribute reporting model (i.e. some assets and liabilities are valued at historical costs whereas others at fair value). Financial Capital is mainly a relationship with owners and creditors and a means to value capitals and objects as discussed later.

Therefore, business reporting would be even further simplified if the capitals could be combined into the following three categories, for easy reference called the three P’s (see figure 1):

**People** Activities Capital (Human Capital and Social and Relationship Capital).

**Physical** Infrastructure Capital (Manufactured Capital and Natural Capital).

**Product** (service) Supply Chain Capital (a new category, usually the carrier and driver of Intellectual and Financial Capital).
Fig. 1: Comparison of different IC-Categories with the three P’s

Intellectual Capital (IC) is a component and attribute in all three categories (3 P’s) and should act as a bridge between reporting financial and non-financial information. The IIRC prototype paper states, that, very similar to Intellectual Capital, „not all capitals an organization uses or that it affects are owned by the organization. They may be owned by others, or may not be owned at all in a legal sense (e.g., access to unpolluted air)” (IIRC [2012c], p. 13). On a wider scale, the boundaries of Intellectual Capital are beyond control of the organization.

Financial Capital can be seen as an offsetting and reconciling Cash Statement to owners, funders and other stakeholders, including tax authorities and other contract related legal commitments. In this regard, presentation and a better integration of the Cash Flow Statement with the other parts of financial statements were considered in joint work by the IASB and FASB and documented in a discussion paper (see IASB [2010]).

The simplified capital categorization would link the three capitals identified closer to the input/output model of the business model for Integrated Reporting (see IIRC [2012c], p. 14). People Activities Capital is, for the main part, a Value Adding Activity. Physical Infrastructure Capital is reflected as an INPUT and resource for creating value. Product Supply Chain Capital is the OUPUT of value creating activities (see figure 2).
Tracking, valuation and describing attributes (currently mostly in disclosures) should be aligned to each of the three P’s and a great deal of duplication and mapping in data collection for reporting could be avoided (e.g. GRI information on people: „combine all people information such as salaries, bonus payments, stock options and awards, direct travel expense, employee commuting, memberships, benefits, pension expense, training and education expense, diversity and equal opportunity information, equal remuneration men and women, health and safety information, collective bargaining, child labor information, indigenous rights information, etc.”). A segmentation on people reporting, e.g. men/women employees, part-time/full-time, highly paid/lower paid, in a standard taxonomy would be helpful to make the data comparable.

Obviously, currently used performance measurements, ratios, matrixes and key performance indicators (KPIs) can and should be aligned to the three categories of capital (three P’s).

### 3.2 Organizing Data – Data Collection, Data Structures and Validation

„Since the introduction of the term ‘data warehousing’ in 1990, companies have explored ways they can capture, store and manipulate data for analysis and decision support. At the same time, many companies have been instituting enterprise resource planning (ERP) software to coordinate the common functions of an enterprise” (Smith [2002]). Finally and to be complete, currently used business reporting tools, performance measurements, ratios,
matrixes and key performance indicators can and should be aligned to the three categories of capital (thee P’s).

The internet has changed the picture again in that very large amounts of data are being produced and software systems can be downloaded and used from the „cloud”. Taxonomies using XBRL are being built to organize data, transport it and to reduce mapping. This will force new approaches in data validation and assurance.

3.2.1 ERP and data warehousing – Big Data and the Cloud

„ERP software usually has a central database as its hub, allowing applications to share and reuse data more efficiently than previously permitted by separate applications. The use of ERP has led to an explosion in source data capture, and the existence of a central ERP database has created the opportunity to develop enterprise data warehouses for manipulating that data for analysis” (Smith [2002]). So, ERP systems and data warehouse (DW) systems can be considered complementary environments. ERP vendors have started to include Business Intelligence (BI) capabilities into their ERP systems in an attempt to capitalize on the need to analyze the data in an ERP in addition to or in conjunction with the data found in a company’s non-ERP systems.

Big data refers to very large amounts of data being produced on the Web. We are now talking in terabytes (TB), petabytes (PB) and exabytes (EB), too large to be kept on local servers and leading to cloud computing. The name cloud comes from the use of a cloud-shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams using hardware and software. Cloud computing entrusts remote services with a user’s data, software and computation. There are many types of public cloud computing, such as platform as a service (PaaS), Software as a service (SaaS) and Infrastructure as a service (IaaS). The promise of cloud computing is to deliver both information technology and software in a more efficient, flexible and reliable way.

3.2.2 XBRL (eXtensible Business Reporting Language)

In the Integrated Reporting Prototype Framework, XBRL is mentioned under „Connectivity of Information” and „Use of Technology” (see IIRC [2012c], pp. 22 and 45).

XBRL (eXtensible Business Reporting Language) is a „dialect” of eXtensible Markup Language (XML), the universally preferred language for transmitting information via the Internet. XBRL improves the way information is created, processed, distributed and analyzed by providing standardized definitions, labels, calculations, references and contexts applicable to individual numbers and narrative text. Two beneficial characteristics of XBRL that improve connectivity are: Consistent semantic definitions of, and explicit relationships between components of an integrated report (see IIRC [2012c], p. 45).

Currently, the use of XBRL is largely restricted to transmit financial information. However, as a technology – and as its name suggests – XBRL is highly extensible and adaptable. It can be applied for general business reporting and there are a number of global initiatives looking to leverage XBRL for non-financial reporting, e.g., environmental, social and
governance reporting. Besides financial reporting taxonomies (e.g. IFRS taxonomy), XBRL taxonomies are now available for GRI and climate change data.

XBRL has great powers in the transport and organization of information, but it has limited utilities in tracking data and information of moving objects.

3.2.3 Data Tracking and Mapping of Information on the three P’s

How can we track and map objects and data on the three P’s to enhance reporting on their existence and validation?

People: Technology now makes it possible to track people and locate them anywhere in the world. Numerous applications and system enhancements are reported every day. LinkedIn, the business people network, claims to be close to a membership of 200 million people being connected. There are now global time tracking, payroll and expense report systems in place, allowing data to be more comparable and consistent.

Physical Infrastructure: ESRI (Environmental Systems Research Institute), Google maps, picture recognition, RFID (Radio Frequency Identification), etc. enable a clear identification and tracking of physical infrastructure. Increased use of technology and location based information by the public sector and governments would enhance transparency of the volume and use of Natural Capital.

Products: Object tracking of products is probably the most advanced of the three P’s. Several industry sectors and supply chains have already integrated their product numbers and identification features. E.g. Amazon and eBay have huge databases of product information.

The global car industry would be one of the best examples to test the system for the segmentation into the three capitals. The industry is an employer of large numbers of people; car production needs physical infrastructure and Natural Capital and has a good tracking mechanism throughout the product supply chain. The sector has an important market share, competition and influence on financial flows and capital (leasing, consumer finance, currency hedges, etc). Through the use of telematics (telecommunications and informatics) tracking with GPS (Global Positioning System) functionality is at the core of future systems for the car industry. Unfortunately, as of November 27, 2012 the IR Pilot Program Business Network of 80 companies does not yet include a typical car company. The car industry has an excellent and transparent supply chain to test the system.

3.3 Assurance on internal and external reporting?

An integrated approach?

Approaches and expenses for the assurance of financial and non-financial reports are even more divergent than the reporting of it. There is a huge variation on audit fees by type of industry and internationally, still reflecting international auditing differences (see Frost/Ramin [1996]. For the audit of the financial statements of Deutsche Bank, which employed 100.000 people globally in 2011, external expenses for audit and related fees for 2011 amounted to 76 million Euros. The audit and related fees for NIVEA-producing Bei-
ersdorf, which employed 19,000 people globally and is valued at 50% of Deutsche Bank (December 2012), external audit related expenses amounted to only 1.5 Million Euros for 2011. Beiersdorf is able to track their products on a detailed basis, whereas the financial product supply chain (Deutsche Bank) is not as transparent, in particular on an international scale. Ironically, due to a larger amount of information presented, assurance expenses for reports on sustainability and non-financial information are a fraction of what the expenses are for financial audits with most companies performing self-assessment or other kinds of assurance (see Carbon-smart [2012], p. 24).

Good internal control is fundamental to any successful audit. In 1992 the Commission of Sponsoring Organizations of the Treadway Commission (COSO) released its first paper on internal control, enterprise risk management and fraud deterrence. The original framework has gained broad acceptance and is now widely used around the globe. In December 2011 COSO presented an updated version „Internal Control – Integrated Framework” with exposure during 2012. COSO anticipates releasing the final update to its internal control framework in the first quarter of 2013. A graphical presentation of the COSO assurance model is presented in Figure 3.

![COSO Assurance Model](image)

**Fig. 3:** Assurance: Internal Control – Integrated Framework (COSO) (Adapted from Committee of Sponsoring Organizations (COSO) December 2011)

To enter the discussion on integrated assurance and internal control, the International Federation of Accountants (IFAC) released a new publication „Evaluating and Improving Internal Control in Organizations” (IFAC [September 2012]).

At the same time there is movement to improve the Auditor’s Report (IFAC’s Exposure Draft „Improving the Auditors Report”, June 2012). Views vary over the appropriate content and structure for reports, and particularly over the issue of „auditor commentary”. However, there seems to be agreement that an integrated audit opinion (single opinion) has to provide more detail than the current „boilerplate” language provided. The auditor’s re-
port should reflect the auditors understanding of the company, its strategy and overall performance.

An approach to greater auditor specificity is embedded in AccountAbility’s AA1000 AS (Assurance Standard) for sustainability reports. It requires the auditor to comment and report on 15 check points.

Clearly, creating a data driven reporting structure would simplify and strengthen the assurance for a truly integrated business report.

4  A paradigm shift as a possible solution

If successful, Integrated Reporting should reflect new ways and approaches to collect and present information to satisfy the requirements of its stakeholders. The new framework needs to be tested in various environments to be an improvement. What is hoped for is a true paradigm shift involving a look at the capabilities of double entry bookkeeping, separating the tracking of objects (capitals) from their valuation and an attempt to at least codify some of the local environments affecting governance and compliance.

4.1  Double Entry Bookkeeping

From its beginnings in the middle ages, double entry bookkeeping has been a wonderful and advanced device to report and check financial information. However, with its limited data tracking capabilities it has outlived its usefulness.

Integrated Reporting demands more than just debits and credits to value entities and estimate future cash flows. Double entry bookkeeping will continue as a “shadow system” for financial reporting and in particular as a reconciliation device for cash flows. Through the use of technology we now are able to track objects and value them separately.

4.2  Objects times Value

Objects: The proposed paradigm shift in business reporting entails the systematic and disciplined tracking of objects. It is the basic assumption of the concept that we always know where all of our objects are, any time. Generally, there are movable and non-movable objects, such as buildings and most natural assets. We must manage objects accurately by tracking them and managing any related conversion (such as of units of measure, e.g. metric versus non-metric) to ensure comparability. The tracking of all objects can be improved by way of computer-readable sensor devices rather than tags. Picture recognition is another way to track objects. Each entity has to define their own objects and level of aggregation (and materiality) within their boundaries. A producer of cosmetics needs to define multiple ingredients and has to track them, whereas at the retail level only the final cosmetic product is the object. A car company is assembling in a just-in-time modus thousands of parts (objects) to create cars for the further use in the supply chain.
Finally it must be stated that, generally, only one party can own (or use) and account for the same object at one point in time to be valued (currently attempted by mirror accounting, e.g. leasing and confirmations, e.g. accounts receivable, cash).

**Value:** In most financial statements objects are valued by applying different valuation techniques, such as historical costs, fair value, present value of future cash flows, estimated values, etc. This mixed valuation approach creates total assets and liabilities not reflecting comparable values within and between entities (see Ramin [2008], Comment letter to SEC). The inconsistent application of currency rates in financial reporting is another major obstacle in reporting performance that is not reflective of where and when resources (objects) are used.

Recently, the International Valuation Standards Council (IVSC) has made great strides to establish standards to be applied on a global basis, but the committee’s efforts deserve more attention to put the standards further ahead in the forefront of valuation and to provide a more consistent definition of values than what is currently outlined in the prototype framework (see IIRC [2012c] pp. 17-19).

Figure 4 attempts to summarize the basic principles for applying Objects times Values.

![Fig. 4: An attempt to summarize the basic principles for applying Objects times Value](image-url)
Human Capital, Structural Capital and Relational Capital are comparable to the 3 P’s in such a way as we can focus on the same object tracking (and related description of attributes) as well as applying the same valuation principles. Human Capital has to be valued at hours performed (plus all human related expenses) during a particular timeframe. In a competitive comparison, different human expense levels could reflect Intellectual Capital differences. Physical and Product Capital should be valued at fair value. Again, competitively, different values and product profit margins could indicate the embedded value of Intellectual Capital.

4.3 Governance, Risk and Compliance, and the New Business Report

Governance is probably one of the most important ingredients of steering a particular business model to success over the longer term. The tone at the top and vision, either by one individual or a team of expert board members or employees/contractors, has far-reaching effects on the attitude towards risks and dealing with opportunities and exploiting them. Governance issues, therefore, form a large part of the IIRC Prototype Framework.

The level of political risk influences decisions where organizations start to place, to continue and expand certain objects. Taxation and compliance with local control frameworks, fraud and corruption levels and other laws play an important other role, besides workforce availability and education. Legacy tax systems, especially on the determination of income, often lead to a de-concentration from the original business model.

Legal differences hinder the implementation of best governance and compliance practices (e.g. as promulgated by the OECD) (see Ramin/Meyer [2012]. Only a few international business entities are able to balance political risk on a global scale. These organizations could serve as a model for a common governance format of an Integrated Business Report.

5 Conclusion

Integrated Reports are here to stay. However, to be useful, the business report has to be presented in a simple and understandable format. A capital orientation to describe past and future performance could be a helpful way moving forward. People, Physical Infrastructure and Products (three P’s) relate well to the pillars of Intellectual Capital: Human Assets, Structural Capital and Relational Capital. Along those lines we can track objects, value them consistently and place management commentaries and segmented information on them, where necessary and material.

In Business Reporting, we need to use more technology to track objects and build taxonomies to make the reports comparable. Convergence of standards and valuation techniques (e.g. US GAAP and IFRS) will only happen through the further use of technology. This will reduce the need for local adjustments, language translations and interpretation. In the longer term, a paradigm shift will have an effect on education, market valuations, taxation and the worldwide adoption of a new Model Business Report describing the entities current, past and future activities and environmental involvements in an integrated fashion.
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