Contribution of Open Research Data to Business Value of Organisation

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Introduction

• Research organisations in the world and in Croatia face the dilemma how to achieve optimal or satisfactory goals with the existing resources, activities and constraints. New trends e.g. Open Science, Open Access, Open Research Data, competitiveness in this area and increasing financial constraints place research organisations under pressure to establish measures and improve performance as well as to achieve greater Business Value.

• The analysis and synthesis of scientific research [1], [2], [5], [6], [7], [8], [10], [13], [14] leads to conclusions that Business Value is about achieving positive effects (benefits) primarily on the process level and on higher levels if they are related (alligned) to business goals. The effects emerge through time based on positive changes enabled by IT, and they can be observed through material (financial) and intangible indicators. In order to measure and communicate the value of the effects, stakeholders also need to be included.

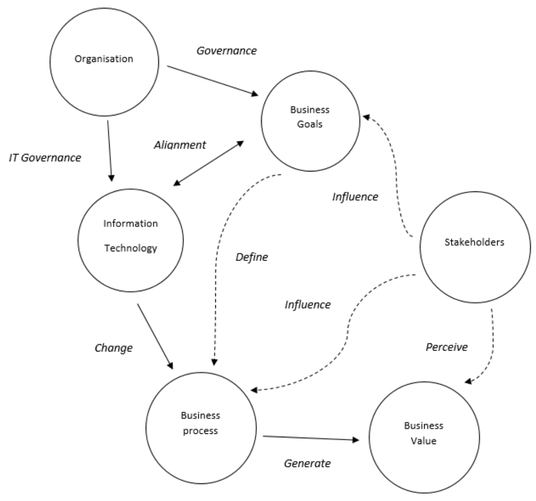

Figure 1: Business Value

• There are different methods and models in the business environment for achieving, monitoring and measuring Business Value, e.g. Two stage model [3], Process approach [11], Model of achieving Business Value by Melvill et al. [7]. The important model which considers the usage of IT and achieving effects is the Information System Success Model by Delone and Mclean [12].

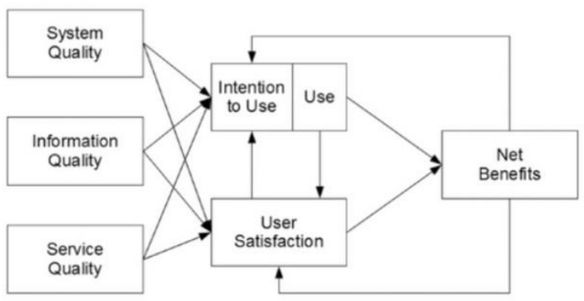

Figure 2: Updated DeLone and McLean IS succes model, [12]

• The following factors are important in achieving Business Value: business processes [3], IT resources (IT assets) [11], management, stakeholders, IT Governance, IT Capability, organisation culture, organisation strategy, organisation structure.

• The key IT resources in public (research) organisations are: digital administrative processes (IS System, Development internal and external IS System), inter-organisational connecting (integration of system), interactive public online interface (exchange of dana with external organisations) and dissemination of information (infrastructure for public access to digital repositories) [9]

Open Science, Open Research Data

Open Science / Open Research Data

• The importance of Open Science and Open Research Data is emphasized in declarations (e.g. Berlin Declaration, 2003), directions (e.g. OECD, 2008), reports (e.g. The Royal Society, 2012), as well as through digital repositories. Openess refers to the exchange of information, sharing data, raw data, results, methods, tools, graphic material, multimedia material.

• Open Research Data are results of scientific research, which can be accessed freely in the digital environment, they are machine readable and can be re-used.

• The key factors for Open Science and Open Research Data are: regulation, digital technology, preparation data, accessible / sharing data, discoverable data, usable data [4].

Research Question

RQ1.: At what level and in what way do Open Research Data attribute Business Value to Research Organisation?

RQ2.: Which elements from Open Science and Open Research Data can be linked to Information System Success Model for assessing Business Value?

Results

RQ1: Proccess and Top Level (e.g. other research, stakeholder); Intangible value; *Internal:* IT Complementary Resource (e.g.Enhancing), New service, Digital transformation
External: Public Stakeholder (e.g. other researcher, public,..), improving communication and colaboration.

RQ2:

System Quality	OS, ORD
Ease of use	Browsing, Searching Data
Realiability	Control policy, Relevant ID for Digital Objects & Researcher
User requirements	Available (Free, Relevant) Data
System features	Dictionary, Thesaurus, Different content (e.g., Video, Picture, 3D model)
Integration	Linked Open Data, XML

Information Quality	OS, ORD
Availability	Completeness, Timeliness, Metadata
Usability	Interface, Number of clicks, Digital repository navigation
Relevance	Describe “real world” object
Understandability	Context Metadata
Format	Human & Machine readable (e.g. XML)
Interoperability	Coherent Data, Identifiers, Standardization

Service Quality	OS, ORD
Realibility	Consistency of performance, Keeping digital objects & content item correctly
Responsiveness	Provide service, timeliness of service, prompt service
Access	Easy contact, time of operation, location of service
Credibility	Company reputation, Trustworthiness
Security	Confidentiality, Physical safety

Intention to use / Use	OS, OSD
Amount of use	Digitaly repository
Frequency of use	Log Report
Purpose of use	Research, Education

User satisfaction	OS, OSD
	Find information
	Repository output
	Digital objects
	Linked digital objects
	Number of Reference
	User collections

Net Benefit	OS, OSD
	Improved research
	Transparency
	Creation of trust in organisation
	Development of services
	Reusing data
	Creation of new data
	Research validation
	Sustainability of data

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