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Evaluating e-government projects on the basis of public policy effects

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Motivation and outline

- **IT Value generation by Web services technology* in the Public Administration**
  - **Theoretical background**
  - **IT value generation in the PA**
  - **Research question**
  - **Empirical investigation**
  - **Discussion and conclusions**

***standardized way of integrating Web-based applications using the XML, SOAP, WSDL and UDDI open standard over an Internet protocol backbone**

The antecedents: "Theory of IT Conversion Effectiveness"

- Tracing down to Peter Weill's PhD thesis (1988, 90), then further elaborated in (Weill and Olson, 1989); (Weill 1992)
- Main idea: organizations differ in **IT conversion effectiveness**, *"the ability to convert expenditures into assets that provide value to the investing firm"*
- Principal determinants (Weill 1992)
  1. Top management commitment
  2. User information satisfaction
  3. Internal political turbulence
  4. Experience in IT management

IT Conversion Effectiveness

- **Peter Weill (1992)- IT conversion effectiveness path:**
  - **Investment inputs**
  - **Productivity increases**
  - **Realized Business Value**
  - **Organizational performance improvements**

Process Theory

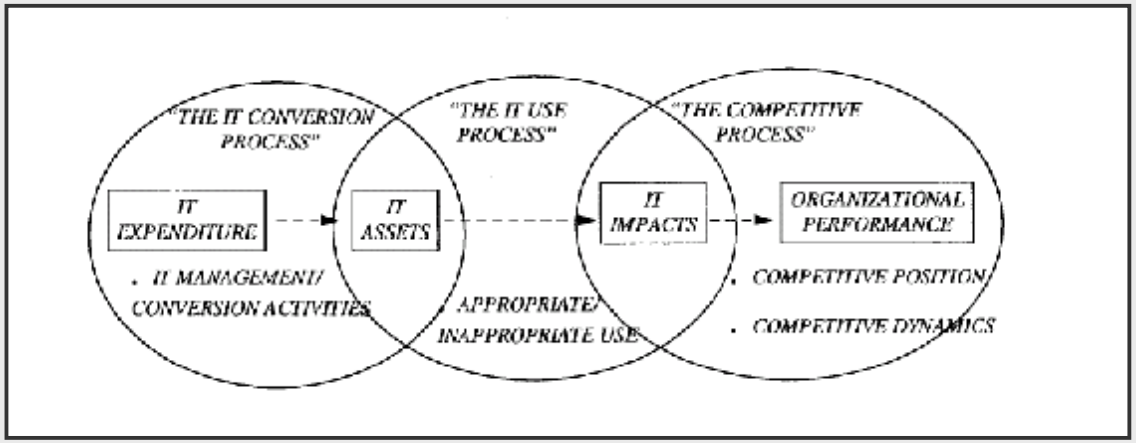
- In case of outcome uncertainty, process theories have been shown to have distinct advantages over variance theories (Markus and Robey 1988)
- Causation consists of necessary conditions occurring in a particular sequence in which change and random events play a key role

The Theory of "IT Conversion Effectiveness": a process view (Markus and Soh 93)

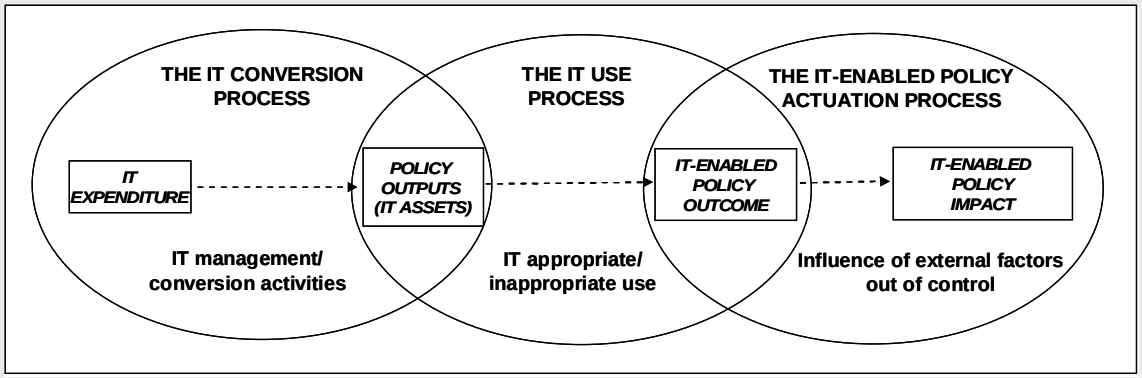
To convert IT expenditures into IT assets…

- **Four areas of IT management are implied (Adler, 1989):**
  1. **Strategy formulation**
  2. **System design/development**
  3. **IT Project management**
  4. **IT Organization design**
- **Structural factors**
  - **Firm size, industry structure**

The IT value generation process



Soh and Markus (1995): private sector



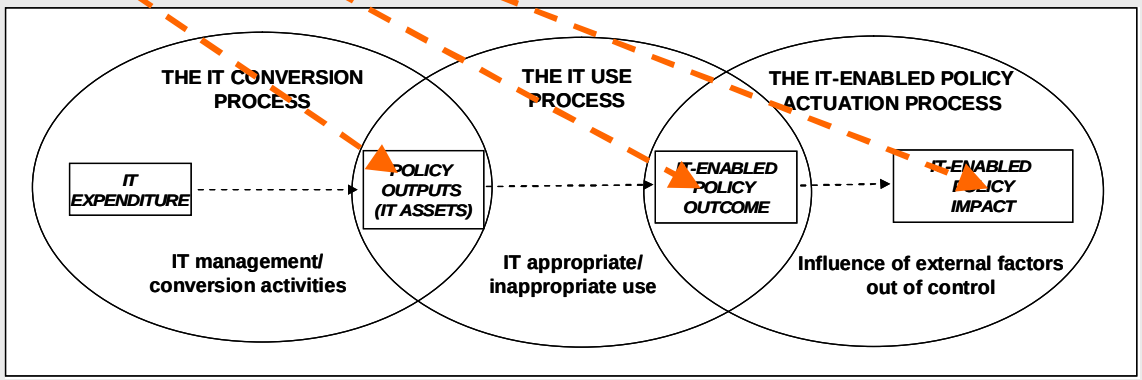
Our application to the Public Sector

IT value in the PA

- **IT Value in the Private sector**
  - **The capability to produce revenues**
    - **for one year (current asset)**
    - **for several years (fixed asset)**
- **IT Value in the Public sector**
  - **The capability to produce public policy "effects"**
    - **for one year (current asset)**
    - **for more than one year (fixed asset)**

Public policy effects (Regonini 1997)

- **Policy outputs**: Products of the PA activity, such as goods, services, payments, and norms.
  - **Policy outcome**: The direct result of the action of the policy makers (through policy outputs) on the policy takers.
    - **Policy impact**: the wider consequences, intended and unintended, of the policy on the community, when combined with external factors that are not under control by the policy maker.



Web services, IT integration and value generation

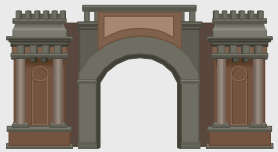
- **Research question:**
  - **How can IT projects generate value in the Public Administration (PA)?**

Exploratory case study: WS-based IT Integration project at the Municipality of Genoa

CR
(Commerce Regulation system)

CRI
(CR Integration)

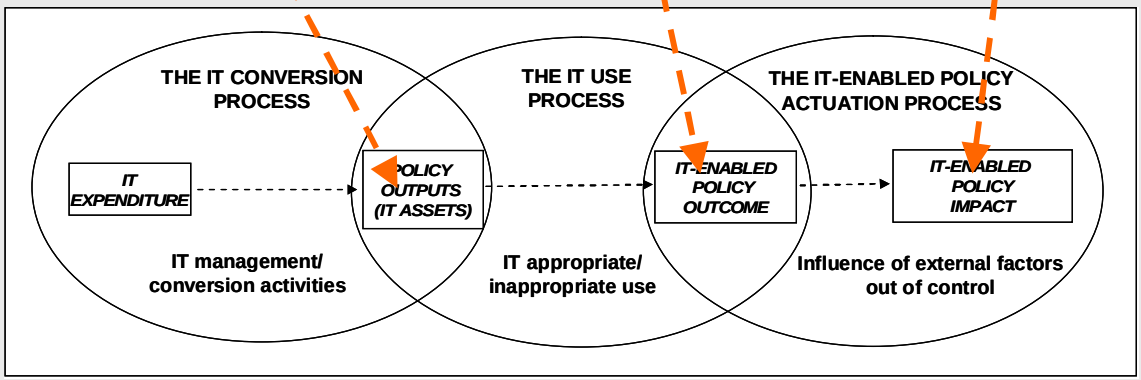
SEAP
(Service portal)



- **CRI (Commerce Regulation Integration) system**
  - **Based on Web services**
- **Systems to be integrated**
  - **CR: Commerce Regulation system**
  - **SEAP: One-stop Service Portal (Commerce Regulation, Sanitary Regulation, Building Regulation, Environment Regulation)**
- **Subjects involved in CRI:**
  - **External software company**
  - **Genoa Municipality IS unit**
- **Data collection**
  - **Two open interviews**
  - **Project documentation**

Before integration

Commerce Regulation System before IT integration with the SEAP portal (CR)		
Outputs/IT assets	**IT-enabled policy outcome (IT assets put into use)**	**IT-enabled policy impact (affected by external factors)**
HW, SW and working procedures of the CR system, in substitution of previous paper-based practices	Less bureaucracy: more efficient and lighter administrative procedures.	Stimulate economic vitality.



After integration

Integrated Commerce Regulation System after IT integration with the SEAP portal (CR+CRI)		
Outputs/IT assets	**IT-enabled policy outcome (IT assets put into use)**	**IT-enabled policy impact (affected by external factors)**
CR system + CRI system. **CR assets now including a few new HW and SW systems devoted to integration with the SEAP portal.**	Less bureaucracy: more efficient and lighter administrative procedures; **easier and wider access to services by citizens via Internet. More transparency and accountability: on-line process tracking.**	Stimulate economic vitality. **Improve quality of life (e.g. less traffic congestion).**

IS Theory prediction
Negligible new assets - > negligible added value

Case study outcome
SIGNIFICANT ADDED VALUE

Conclusions (1)

- **Research question:**
  - **How can IT projects generate value in the PA?**
- **Answer by (Weill 92) theory of conversion effectiveness:**
  - **NEGLIGIBLE VALUE, because no significant new IT assets were generated**
- **Answer by the proposed process model: SIGNIFICANT VALUE**
  - **Pre-existing assets conversion effectiveness is enhanced**
  - **Policy outcome is affected**
  - **Policy impact is affected**
- **Web services technology may play a significant role as enabling technology to leverage legacy systems**

Conclusions (2)

- **Conceptual framework simple but powerful, considering:**
  - **Systems development dimension**
  - **Systems usage dynamics**
  - **Influence of external factors**

Further work (1)

- **Developing a process theory for value generation in PA**
  - **Measuring value and performance in PA**
  - **Methods for empirical validation of process theories**
  - **Extensive and more rigorous empirical analysis**

Further work (2)

- **Models and measures that can empirically characterize the different stages of value generation in e-government**