IDENTITY, STRUCTURAL COUPLING AND FRACTAL ENTERPRISE MODEL

BASED ON:

Ilia Bider & Erik Perjons, Identity Management in an Institution of Higher Education: A Case Study Using Structural Coupling and Fractal Enterprise Model, CSIMQ, Issue 27, pp 60-86, DOI: 10.7250/CSIMQ.2021-27.03

IDENTITY VIA STRUCTURAL COUPLING

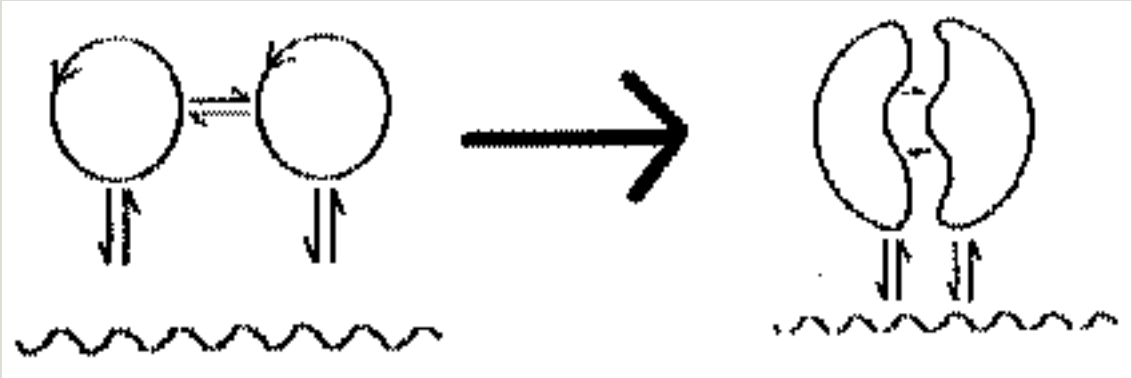
- Original idea "Defining identity by structural coupling in VSM practice" by Patrick Hoverstadt http://bit.ly/2mTsN9D
- Defining organizational identity via structural coupling is similar to defining identity of a person according to the following sayings:
  - "Tell me who your friends are and I'll tell who you are"
  - "Tell me who your enemy is, and I will tell you who you are"
- We just need to find friends and enemies of an organization, like:
  - Friends – customers, suppliers, …
  - Enemies – competitors, …
- For this we will be using Fractal Enterprise Model (FEM) as a tool

PLAN

1. Identity and identity management from the structural coupling perspective
2. Applying FEM for defining organizational identity in a business case. Introducing FEM during presentation
3. Applying the results of the previous exercise: analyzing history of decision making from the identity perspective in a business case
4. Generalization – a preliminary set of rules for defining organizational identity

STRUCTURAL COUPLING

- The concept comes from biological cybernetics, more specifically, from the works of Maturana and Varela
- During evolution a (biological) system adjust its structure to the environment through constant iteration
- Some elements of environment becomes more important than others. Mutual adjustment.
- According to N. Luhmann a system deliberately chooses few other systems to adjust to. They serve as information channels to the rest of the environment



L. Fell, D. Russell. An introduction to 'Maturana's' biology. L. Fell, D. Russell, A. Stewart (Eds.), Seized by agreement, swamped by understanding, Hawkesbury, Sydney (1994).

ORGANIZATIONAL IDENTITY & IDENTITY MANAGEMNT

- Identity = set of structural couplings the organizational system has in its environment
- Identity Management = Maintaining (and, may be, strengthening) the structural couplings.
- Maintaining can be passive/active or both

HOW TO FIND STRUCTURAL COUPLING?

Potential structural couplings

- Competitors
- Customers/suppliers
- Market/Industry sector
- Regulators

From "Patterns of Strategy" by Patrick Hoverstadt, and Lucy Loh

- Might be good enough for experienced management consultant
- Might not be enough for everybody else

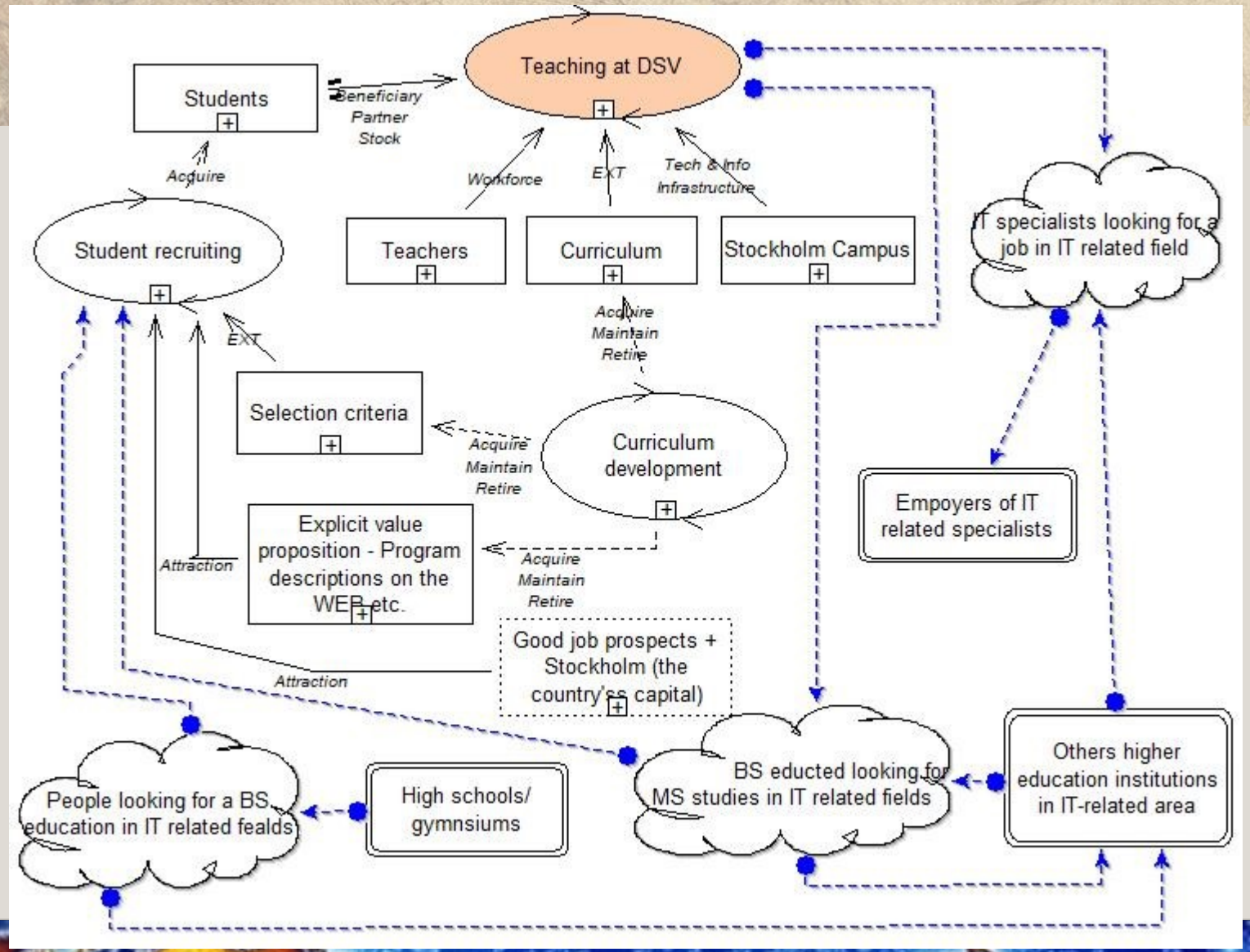
Is there any more systematic way?

BUSINESS CASE

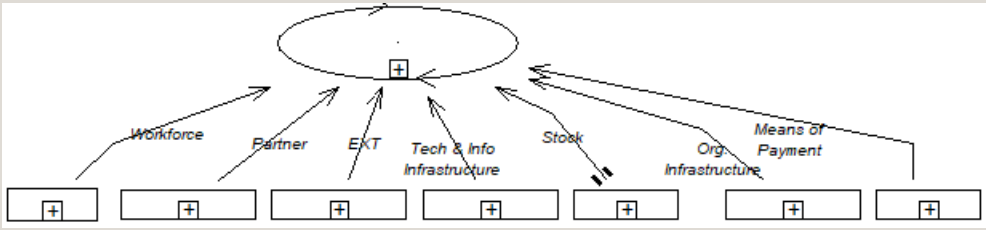
- Department of Computer and System Sciences, abbreviated to DSV, at Stockholm University
- Bachelor, master, and doctoral programs in the fields of Computer Science and Information Systems.
- About 5000 students in undergraduate and graduate studies
- About 180 staff members including teachers and administrative staff

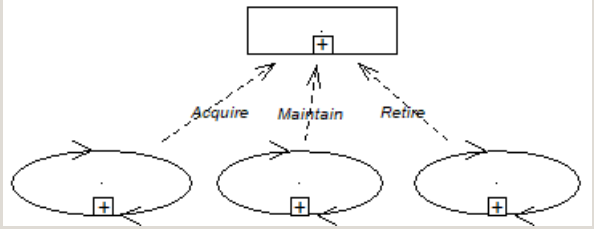
Only educational activities are considered in this study

SIMPLIFIED FEM FOR DSV

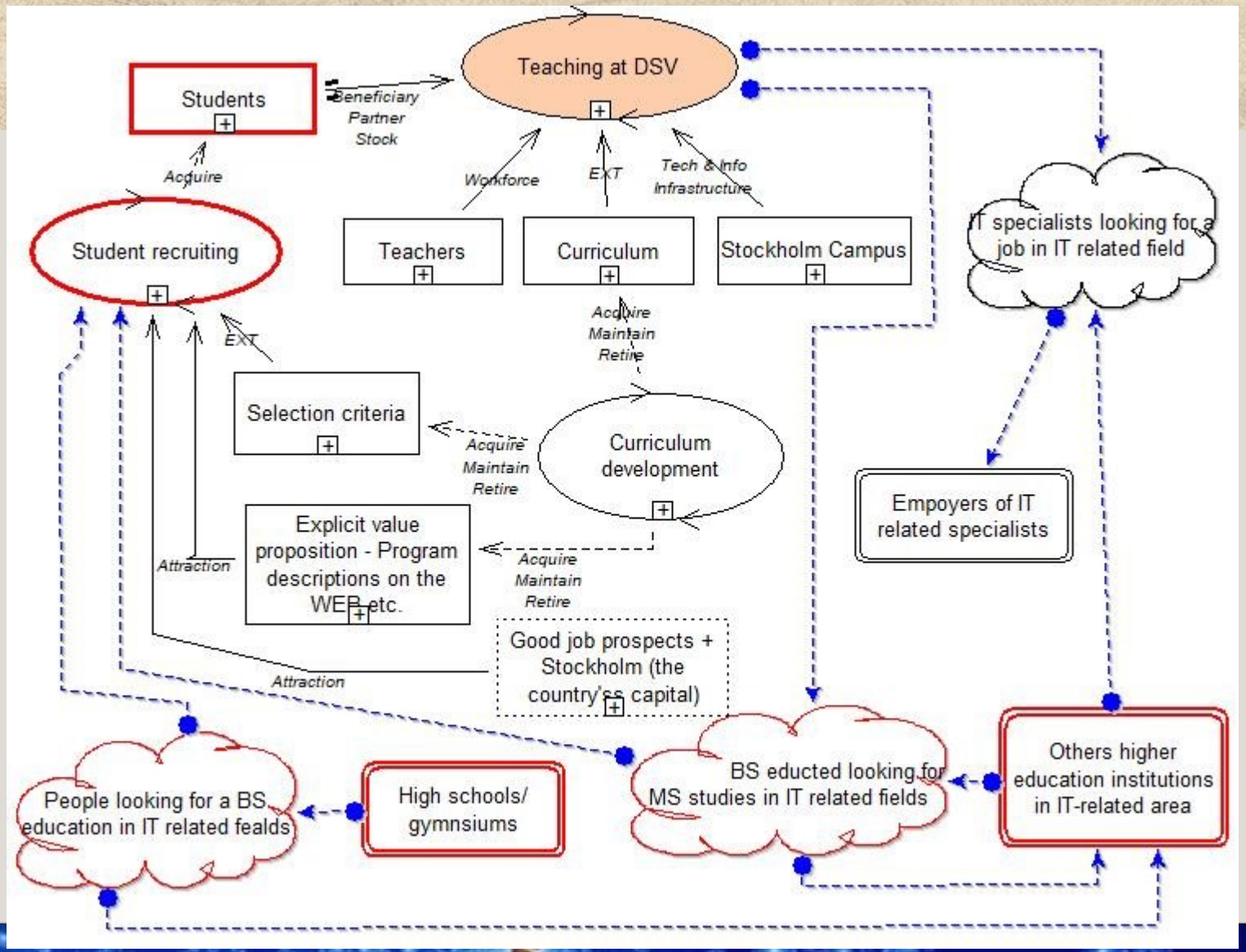


Archetypes





STRUCTURAL COUPLING VIA INBOUND POOLS



STRUCTURAL COUPLING VIA INBOUND POOLS

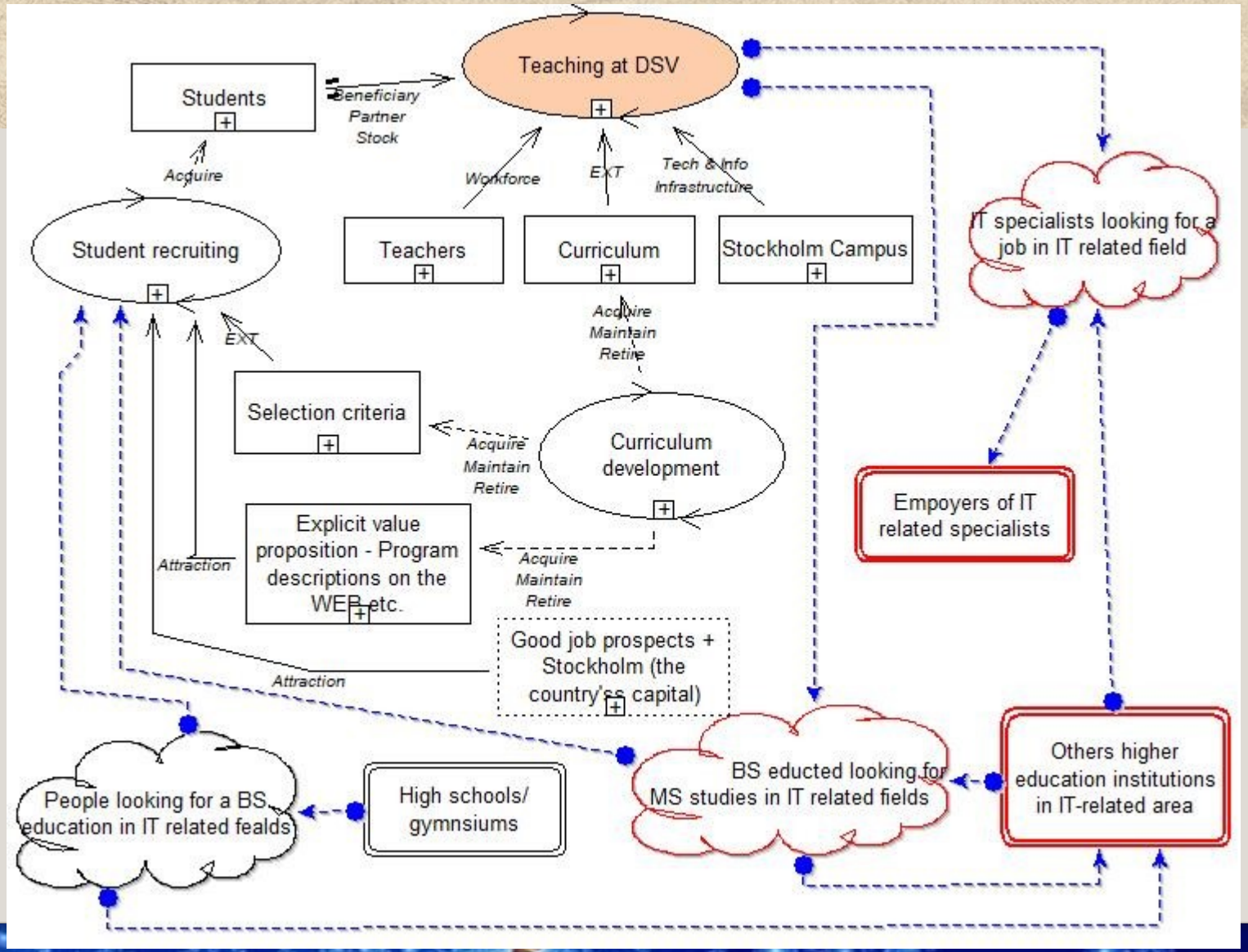
If in a FEM of an organization:

1. *there is an essential process, which is not easy to remove, and*
2. *this process has an essential asset with high rate of depletion, which needs to be constantly filled, and which is not possible or not easy to remove or substitute, and*
3. *an Acquire process for this asset is connected to an external pool from which it is getting new elements to fill the asset*

then the organization is structurally coupled to the pool

If an organization is structurally coupled to an external pool, it may also be structurally coupled to the actors that fill this pool, (providers) or draw from the pool (e.g. competitors).

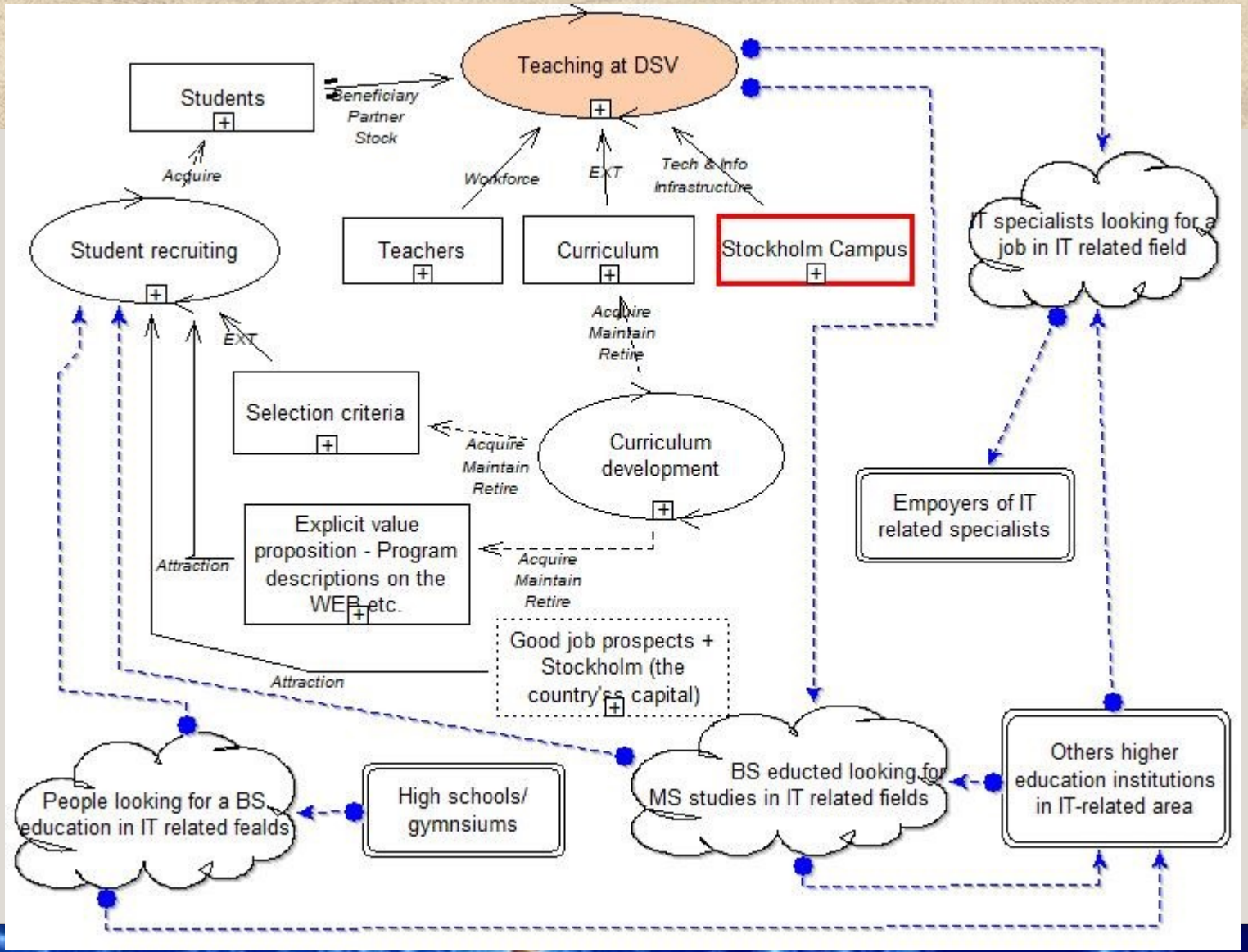
STRUCTURAL COUPLING VIA OUTBOUND POOLS



STRUCTURAL COUPLING VIA OUTBOUND POOLS

If in a FEM of an organization, there is a process that constantly adds elements to an external pool then the organization could be structurally coupled to ***external agents*** *that draw from this pool, and also to the external agents that add to the pool.*

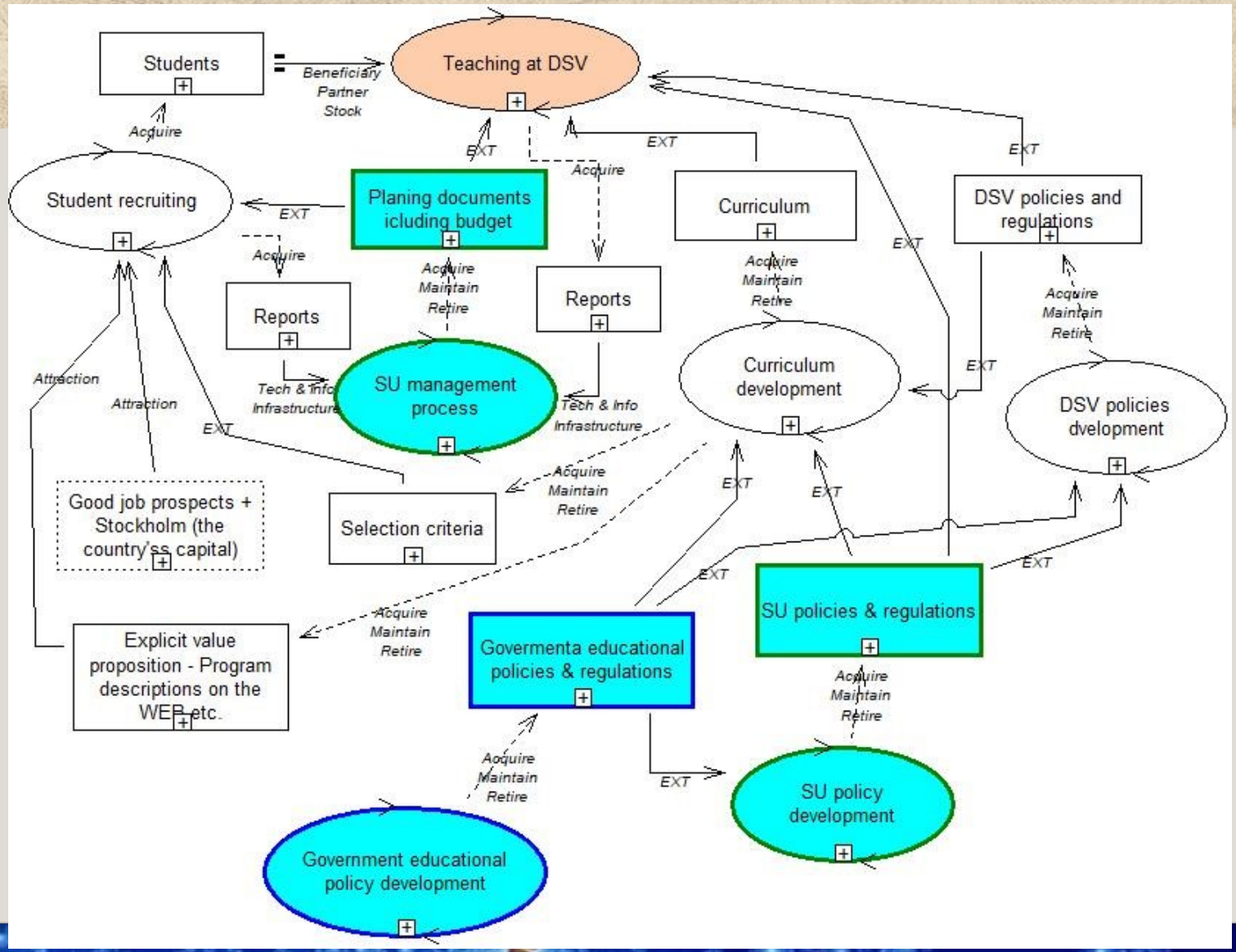
STRUCTURAL COUPLING TO GEOGRAPHICAL LOCATION



STRUCTURAL COUPLING TO GEOGRAPHICAL LOCATION

If the major activities in an essential process for the organization are carried out in a geographical location and cannot be moved to another location without substantial disturbance of the organization functioning, then the organization is structurally coupled to this geographical location

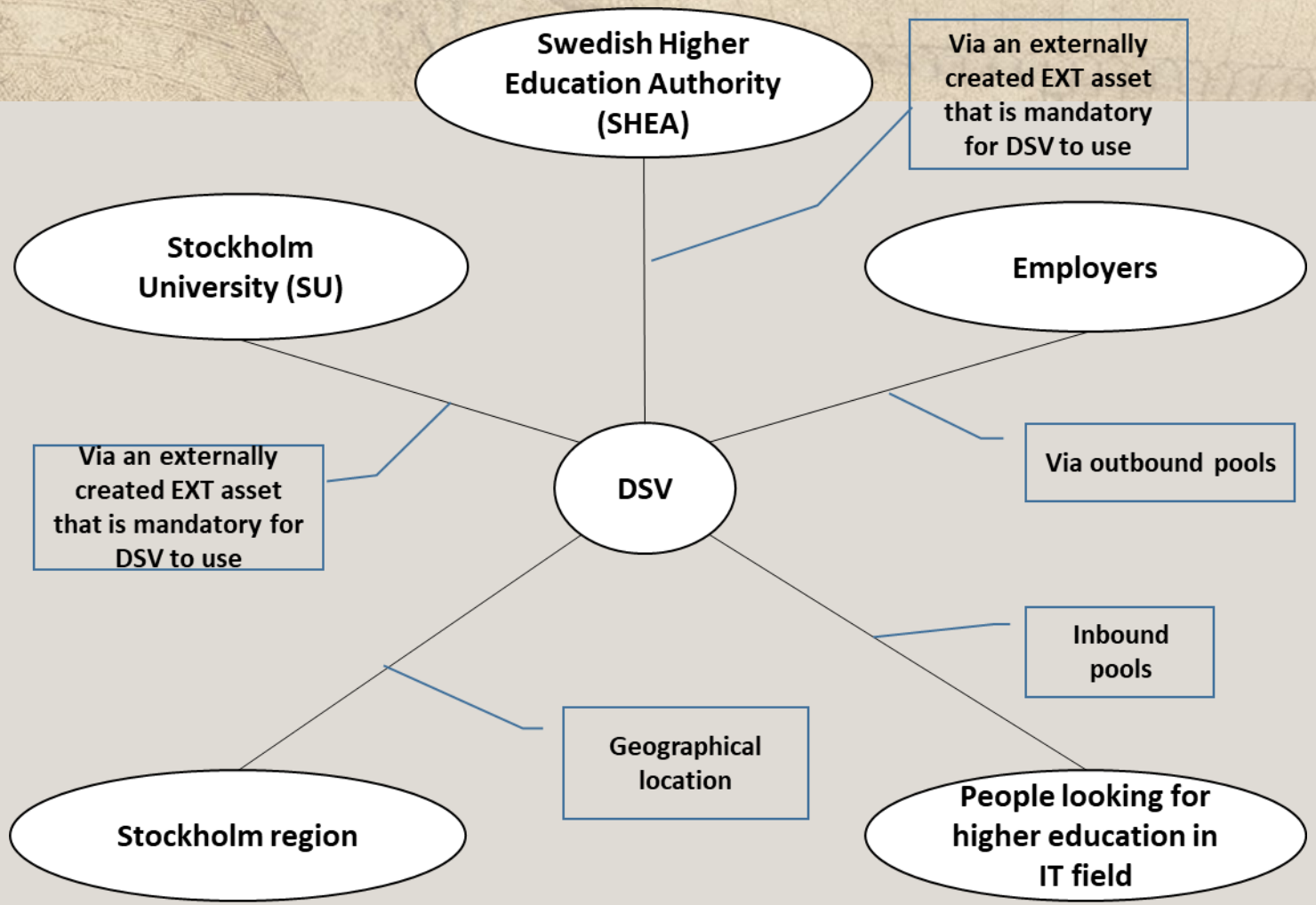
STRUCTURAL COUPLING TO REGULATORS



STRUCTURAL COUPLING TO REGULATORS

If in a FEM of an organization there is an EXT asset that is created by a third party, and the organization needs to produce reports back to this party related to this asset, or/and can expect an inspection to check the compliance of respective processes to this asset, then the organization could be structurally coupled to the ***third party*** *from which the asset originated.*

STRUCTURAL COUPLING OF DSV



STRUCTURAL COUPLING OF DSV

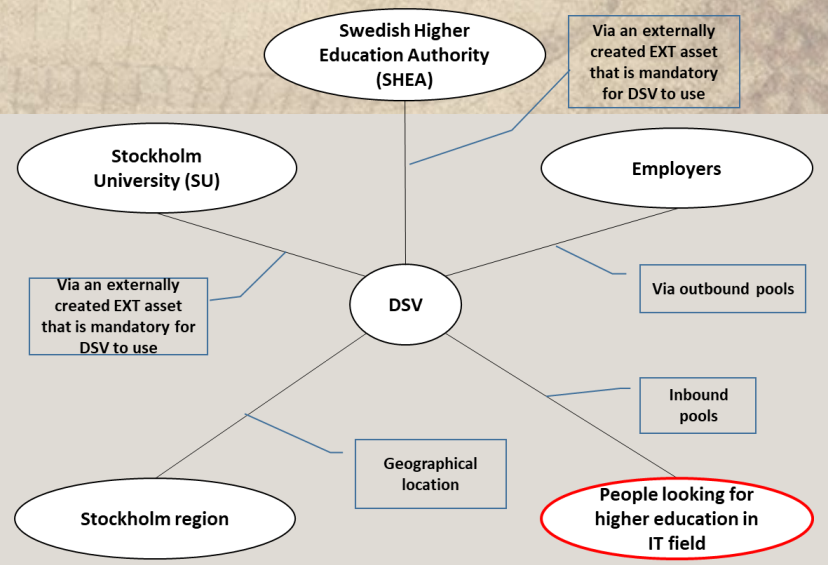
Structural coupling	1. FEM diagnose	2. Business term	3. Identity management goal	4. Role in coupling	5. Reaction/ influence type
DSV – People looking for higher education in IT field	Inbound pools	Buyers in the market of higher education	Attracting enough students to enroll who have a potential to finish.	Passive	Adjust itself to changes in quantity and quality of the pools
DSV – Employers of IT-related staff	Outbound pools	Buyers in the labor market of IT specialists	Providing employable graduates	Passive	Adjust itself to the changing demands
DSV – Stockholm region	Essential asset bounded to location	Geographical region	None	Neutral	Do nothing (until there is a crises)
DSV – Stockholm University	External producer of EXT assets	Management	Producing the quantitative and qualitative results in exchange to the resources obtained. Follow SU policies	Symmetrical, but more passive than active	Negotiate, adjust itself
DSV – Swedish Higher Education Authority	External producer of EXT assets	Regulator	Comply to policies defined by the state	Passive	Adjust itself to the policy demands

ANALYSIS OF PAST DECISIONS

Case name	Related to structural coupling to	Nature of change
1. Introducing international MS programs	People looking for higher education in IT field; SU	Changing teaching language to English in Master level education and developing new MS programs
2. Introduction of a new process for BS and MS thesis projects	SHEA - Swedish Higher Education Authority	A new process established with a set of responsibilities defined for different groups of academic staff. People trained to work differently. New technology introduced
3. Dealing with decreasing levels of students' academic preparedness	People looking for higher education in IT field	Changing teaching methods and utilizing new technology
4. Introducing Bologna Process recommendations	SU; SHEA; Employers of IT-related staff	Reducing the number of courses, while remaining relevant to ES
5. Introducing distance MS programs	People looking for higher education in IT field; Stockholm Region	Changing teaching methods and using new technology

STRUCTURE OF EXAMPLES

When	
Cause	
Conditions	
Changes	

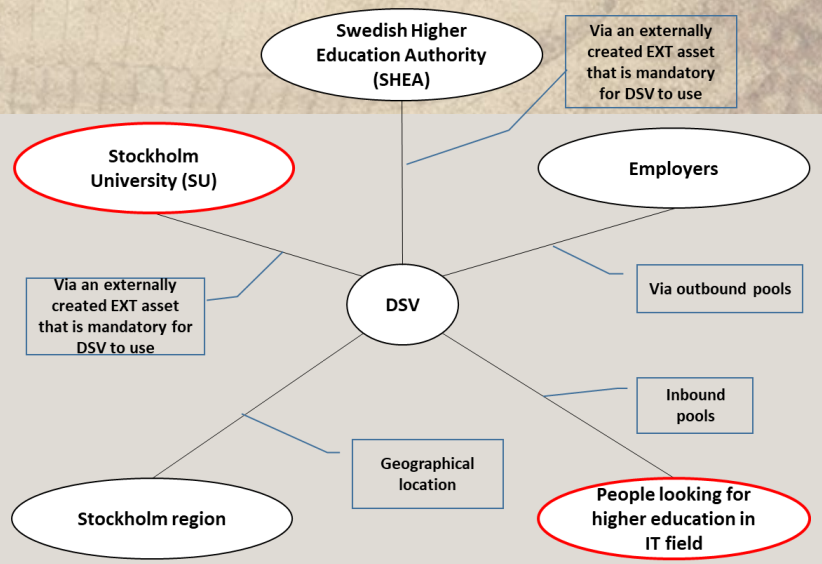


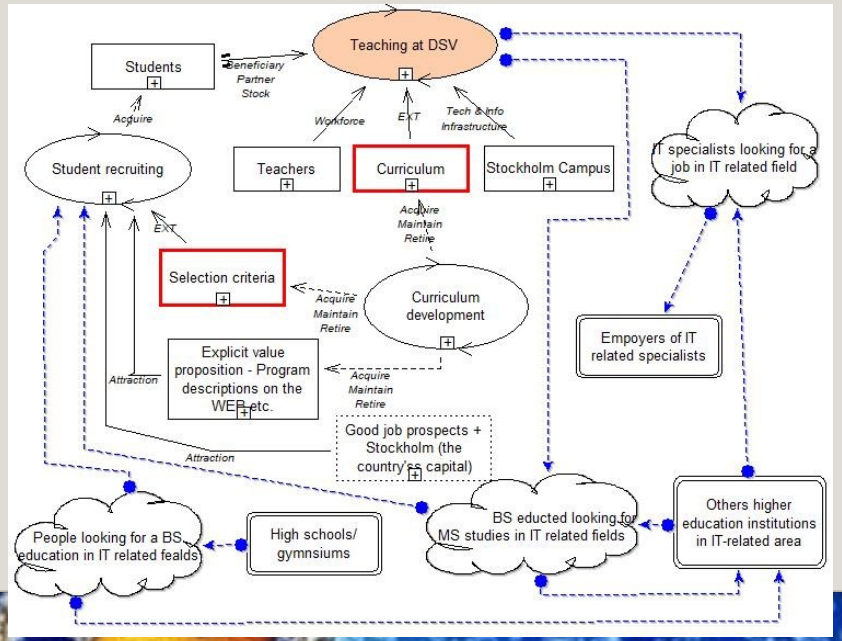
Synopsis

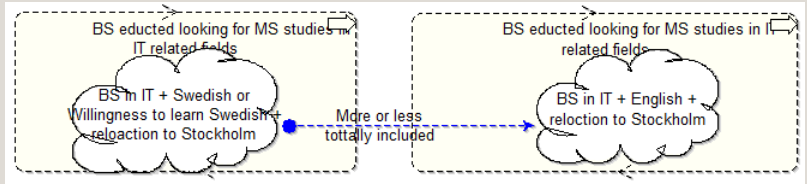
People looking ... - Affected structural coupling

#1 - INTRODUCING INTERNATIONAL MS PROGRAMS

When	End of 1990th
Cause	• Demographic deep • IT boom
Conditions	All programs taught in Swedish (hinders for international students)
Changes	International MS programs taught in English

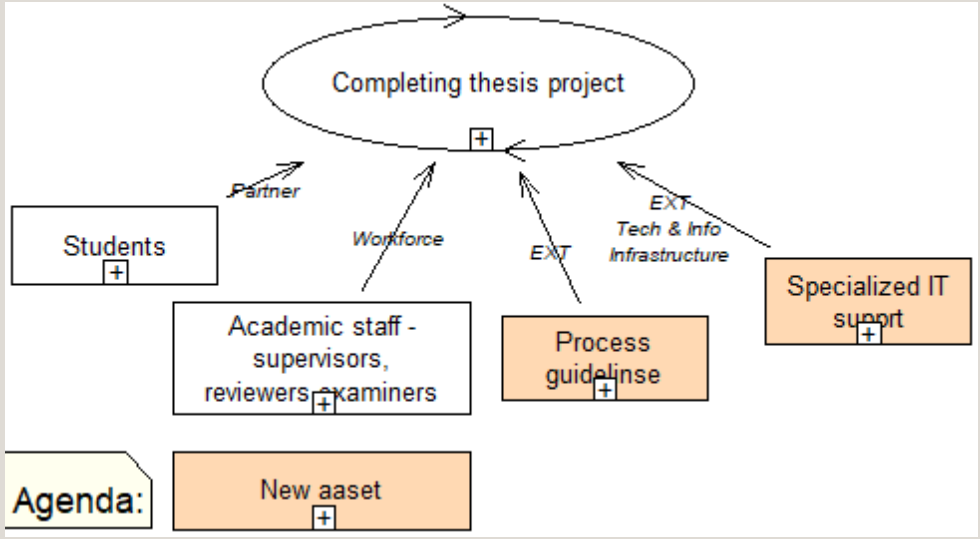


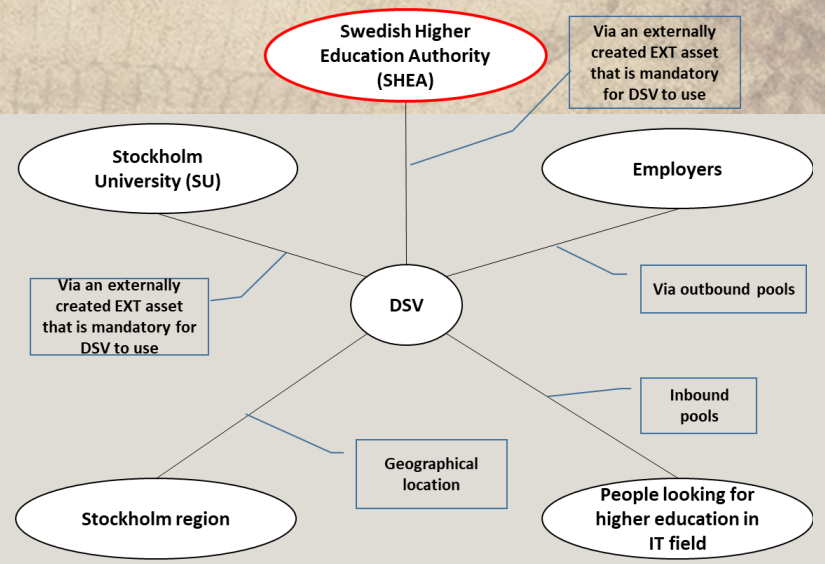




#2 - INTRODUCTION OF A NEW PROCESS FOR THESES COURSES

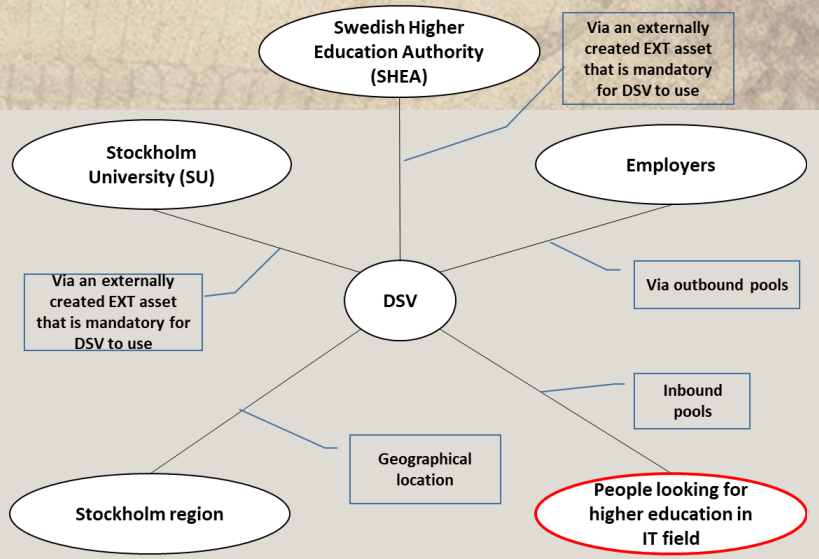
When	2011
Cause	Inspection from SHEA found the quality of thesis reports low. Threat of closing some programs
Conditions	Despite high employability of graduates. Forgetting importance of the structural coupling.
Changes	Thesis course redesign, new set of responsibilities, new management system

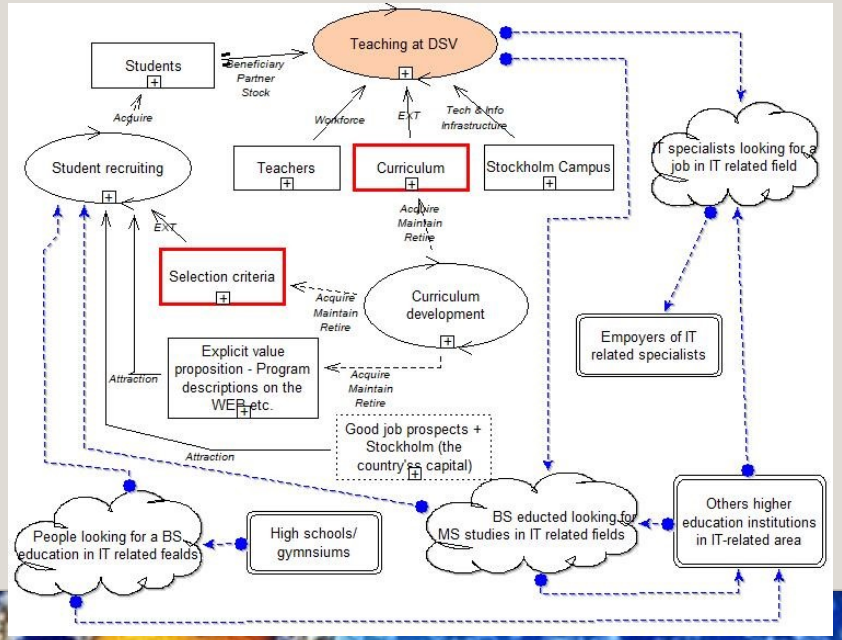




#3 - DECREASING LEVELS OF ACADEMIC PREPAREDNESS

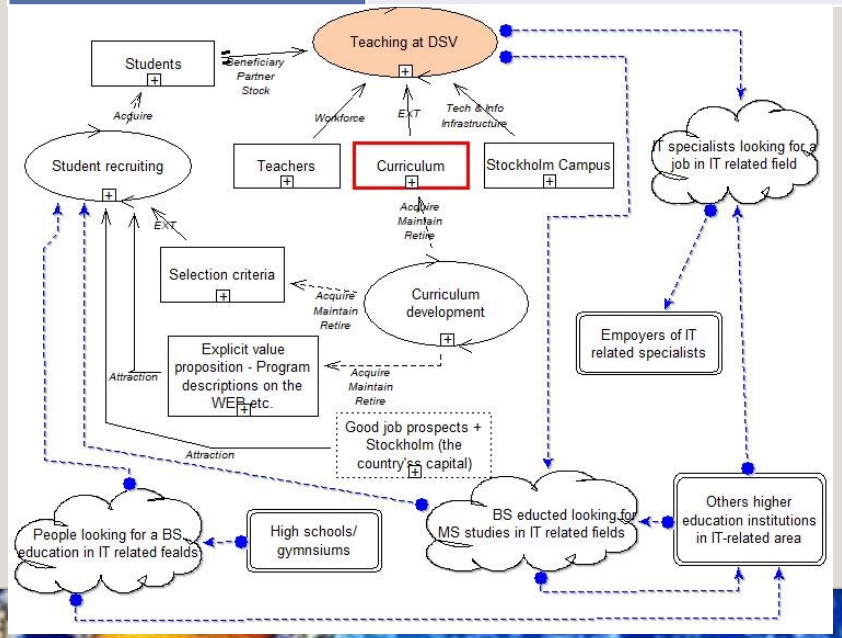
When	During the last two decades
Cause	Policy changes
Conditions	Without formally changing requirements on the graduates
Changes	Teaching Methods. Utilizing technology

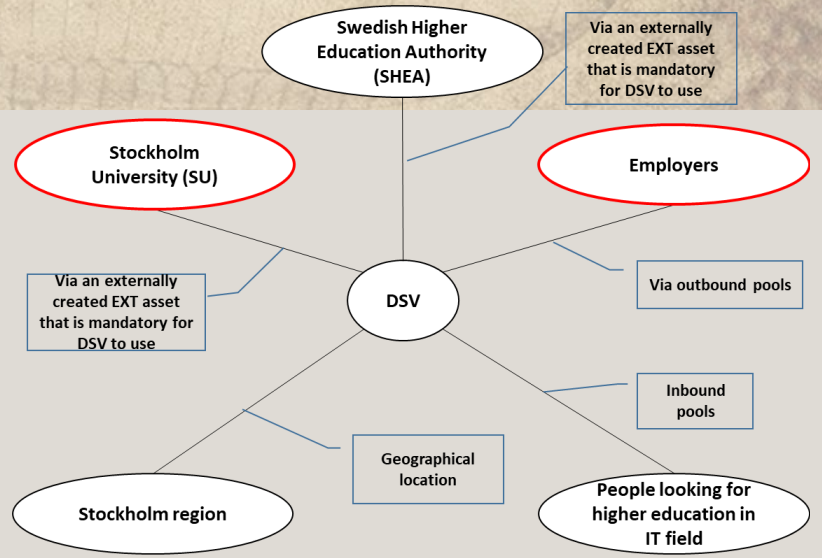




#4 - INTRODUCING BOLOGNA RECOMMENDATIONS

When	Around 2000
Cause	University accepting Bologna recommendation
Conditions	The undergraduate programs where one year longer, while post-graduate programs were one year shorter
Changes	Cutting up the number of courses while remaining relevant to employees





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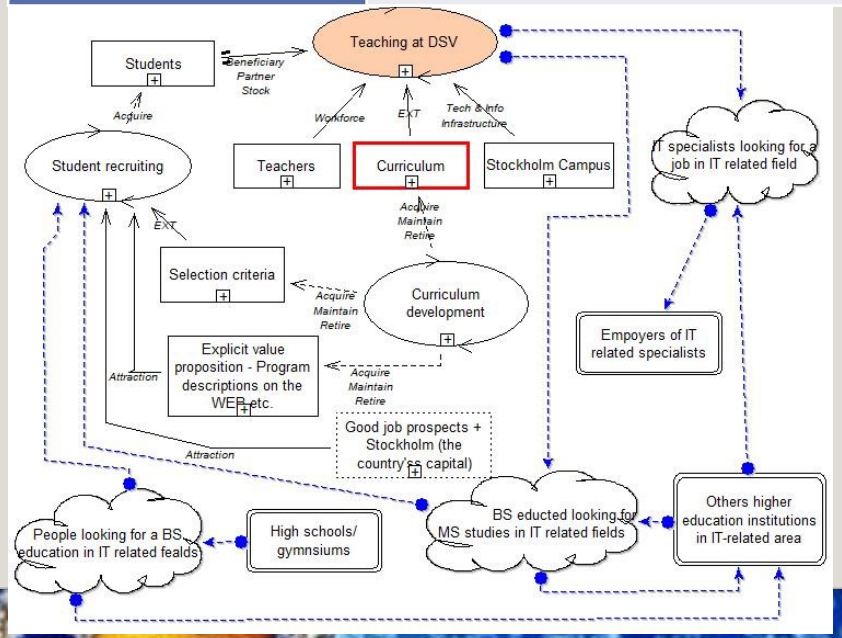
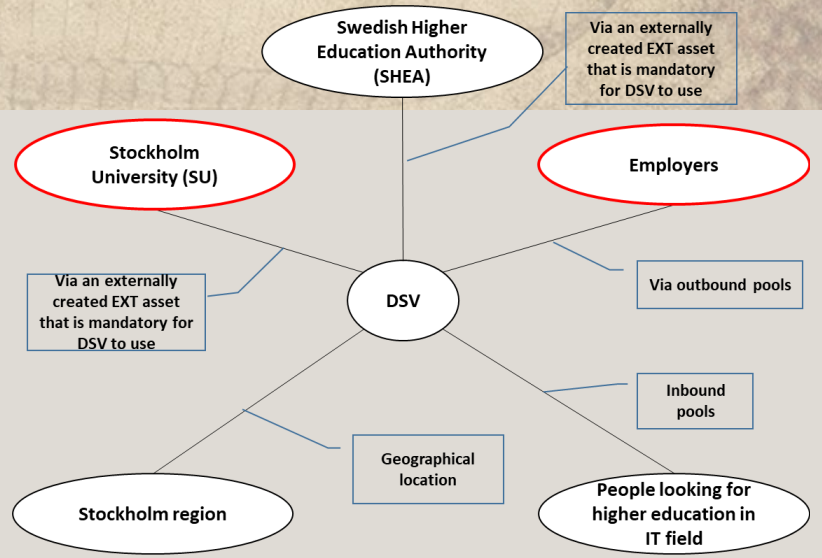
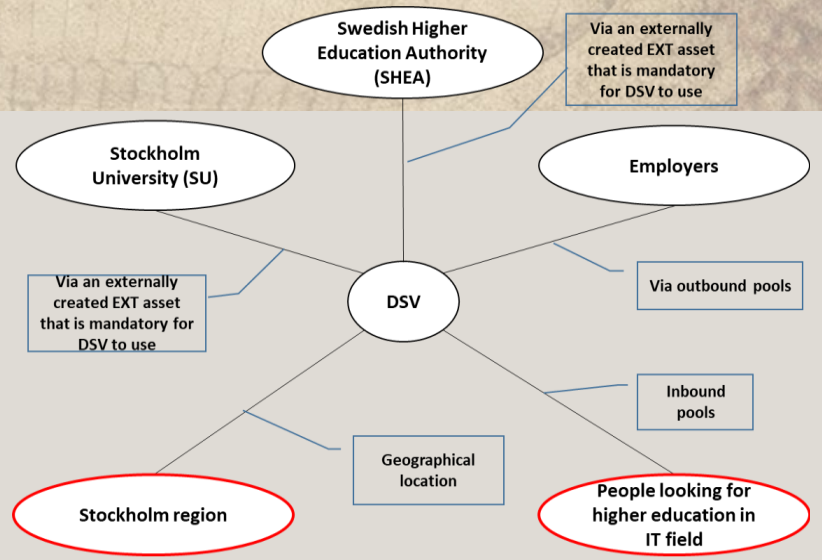
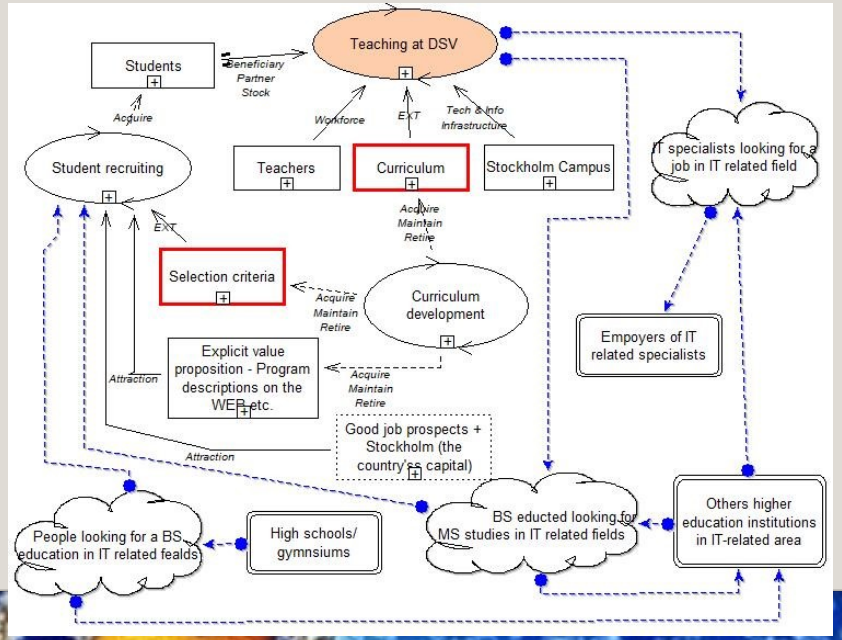


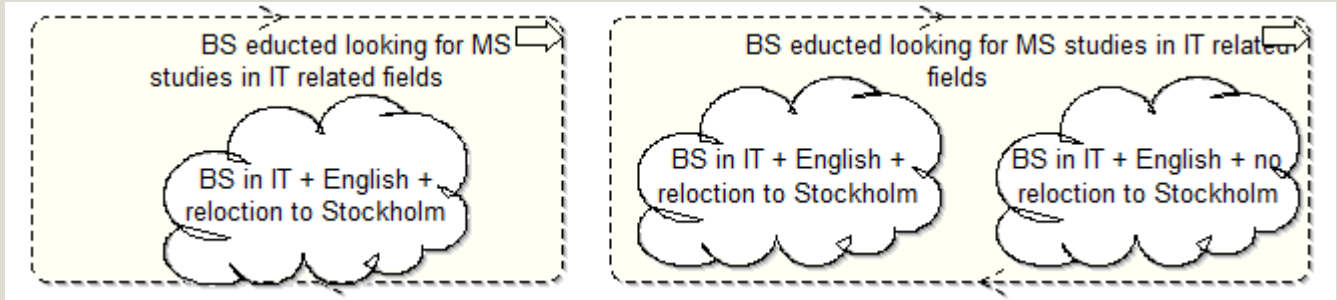


#5 - INTRODUCING DISTANCE MS PROGRAMS

When	2010th
Cause	Higher efficiency (perceived). Testing new technology
Conditions	Technology that supports distance education
Changes	Teaching methods, technology







GENERALIZED PROCEDURE

1. Build a FEM (essential assets that need refilling, pools, external EXT, external actors and processes)
2. Use rules to identify potential structural couplings
3. Investigate which of potential structural couplings are structural couplings. Make a diagram
4. Use the diagram and FEM as a tool for making decision that intentionally or nonintentional may affect structural couplings

STRUCTURAL COUPLING TO A PARTNER

If in a FEM of an organization:

1. *there is an essential asset, which is impossible or difficult to substitute for some other (e.g. similar) asset, and*
2. *one or several processes that are used to manage this asset, i.e. Acquire, Maintain or Retire, have a Partner asset that is difficult or impossible to remove or substitute,*

then the organization is structurally coupled to the Partner asset

STRUCTURAL COUPLING TO A CUSTOMER

If in a FEM of an organization:

1. *there is a beneficiary asset in a main process*
2. *that also plays a partner role for acquire process for a stock asset that initiate instances of the main process (e.g. a stock of manufacturing orders)*
3. *and the beneficiary asset consist of one or very few elements, but as a partner contribute to the major part of the initiating stock*

then the organization is structurally coupled to the beneficiary asset

MANAGING STRUCTURAL COUPLINGS

FEM Diagnostic	Structural coupling variants	Explanation	Potential strategy for managing the coupling	Reaction/ influence type
1. Inbound pool from which entities to refill an asset are drawn	Pool itself (market)	Buyers (e.g. potential customers) in the marketplace	Appropriate explicit or implicit (e.g. via other structural coupling) value proposition and providing products and services accordingly	Adjust product/services to demand. Influence buyers to change the focus of their demands towards innovative product and services
		Sellers (Potential employees or vendors) in the marketplace		
	Competitors (drawing from the pool)	In case of hard competition and lack of established niche occupied by the organization	Differentiation, or be as good as your competitors	Maintain differentiation or follow the leader, or influence others to follow you.
	Providers (adding to the pool)	If there is a distinct group of providers that could be monitored and/or influenced	Early discovery of trends in what providers adds or are willing to add to the pool	Adjust to the trends and/or influence providers to add elements that are most suitable for you

MANAGING STRUCTURAL COUPLINGS

FEM Diagnostic	Structural coupling variants	Explanation	Potential strategy for managing the coupling	Reaction/ influence type
2. Outbound pool to which the company adds elements and which can be overflown	Organizations drawing from the pool	Buyers in the market if pool is a market	Early discovery of changes in demands, finding ways of influencing the demand	Adjust to trends and needs of the buyers, influence their demand
		Cleaners if the pool is waste	Early discovery of changes in technology, finding ways of influencing the cleaner to clean the waste	Adjust to trends and needs of the cleaners, make it easier for them to clean
3. Essential asset bounded to location	Geographical region	Infrastructure, workforce, or something else is rely on being in the region	Looking for trends that may make the coupling dangerous for the organization	Try to decouple in time if there is a danger

MANAGING STRUCTURAL COUPLINGS

FEM Diagnostic	Structural coupling variants	Explanation	Potential strategy for managing the coupling	Reaction/ influence type
4. External producer of essential/ mandatory EXT assets	Upper management	An upper management if the organization is part of a bigger one	Fulfill the obligations, negotiate resources, be ready for (surprise) inspections	Negotiate, adjust itself to the demand
	Regulator	A body that can force certain regulations, but do not provide resources	Complying with existing regulation, influencing changes, be prepared for (surprise inspections)	Complying with regulations, lobbing for changes

MANAGING STRUCTURAL COUPLINGS

FEM Diagnostic	Structural coupling variants	Explanation	Potential strategy for managing the coupling	Reaction/ influence type
5. Partner in one or more processes responsible for managing an essential asset	Partner	An organization that managers an essential/critical asset	Influencing the partner to adapt the asset to better suit the needs of the organization	Discus and argue for changes
6. Beneficiary of a main process + a partner managing initiation of the process instances	Customer	One or several essential customers on which existence of a main process depends	Discovering the changes in customers' needs, influencing changes in customers demand	Changing products and services, educating the customer

Q & A

Thank you!

Contact information: ilia@dsv.su.se

Additional papers related to structural coupling and FEM

- Bider, I. , Regev, G. , Perjons, E., 2019. Using Enterprise Models to Explain and Discuss Autopoiesis and Homeostasis in Socio-technical Systems. In *CSIMQ*, No 22, 2020, pp.21-38.
- Bider, I. Structural Coupling, Strategy and Fractal Enterprise Modeling. *Research Challenges in Information Science. RCIS 2020*. LNBIP, vol 385, Springer

More information on Fractal Enterprise Model: https://www.fractalmodel.org/