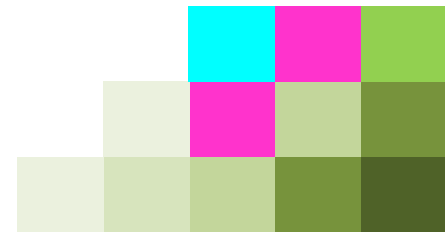# Social Mining

Aligning the social dimension together with knowledge and process types

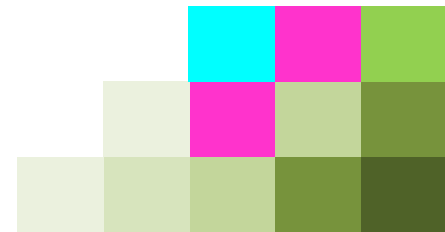**process sphere**

Innovation driven BPM

Agenda:
1. The factors that making change happen
2. Mining social networks
3. Mining knowledge
4. Mining process types
5. Aligning social, knowledge and process types

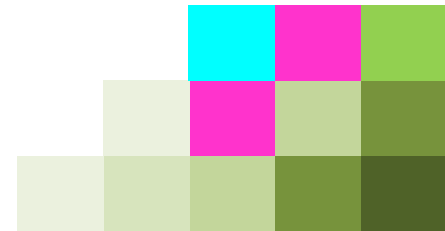process sphere
Innovation driven BPM

Agenda:
1.   The factors that making change happen

process sphere
Innovation driven BPM

Let's face it

Processes are becoming complex (*)

The world is a complex system

(*) finally!

Variety absorbs variety, for a process to be viable it must be capable of coping with the variety
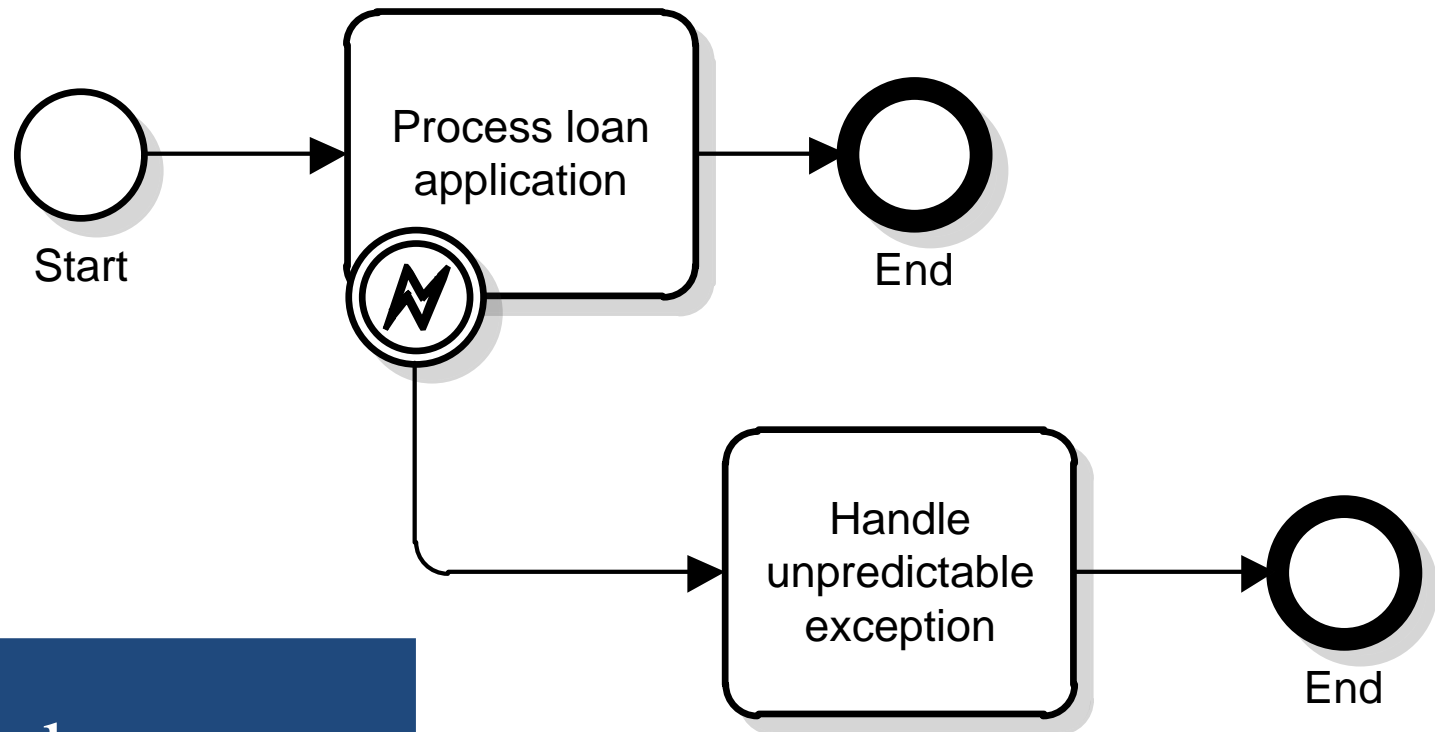

Automatic process discovery - Rule Based Process type . Source: Process Sphere

How to analyze such a process?

Fact #1

More and more repetitive work is being 100% automated

Process execution needs to adapt to instance mode. This means that most of processes instances are not executed on top of a prescriptive process model.

Alberto Manuel - Book - How knowledge workers gets things done - 2012

Start

Process loan application

End

Handle unpredictable exception

End

How do we understand what is inside the exception handler? (*)

(*) That is the most important part of the process

7

Fact #2
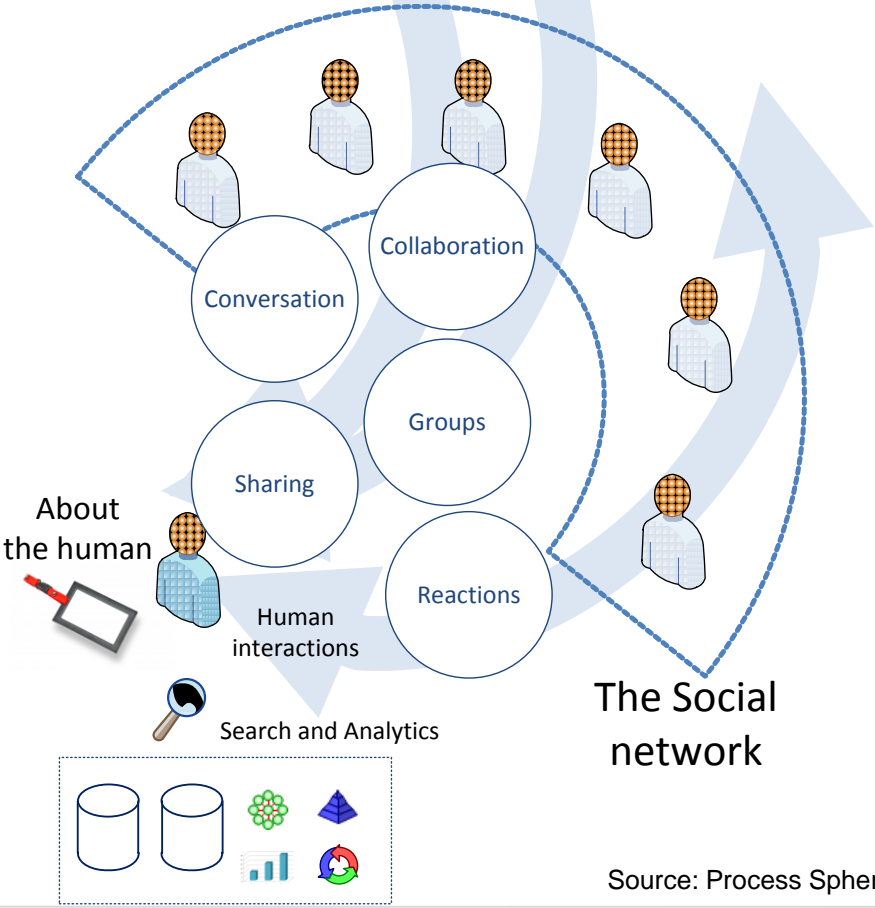# Social Business is flattering and transforming organizations

70 % of companies use social technologies
90% of companies using social technologies that report some business benefit

The social economy - unlocking value and productivity through social technologies - Mc Kinsey 2012

Social technologies are employed by 79% of organizations

Gartner newsroom - 2013

Business gets social, based on a "social platform"

About the human

Human interactions

Conversation

Collaboration

Groups

Sharing

Reactions

Search and Analytics

The Social network

Source: Process Sphere

Fact #3

High-skill workers are necessary to handle the wave of technology disruption

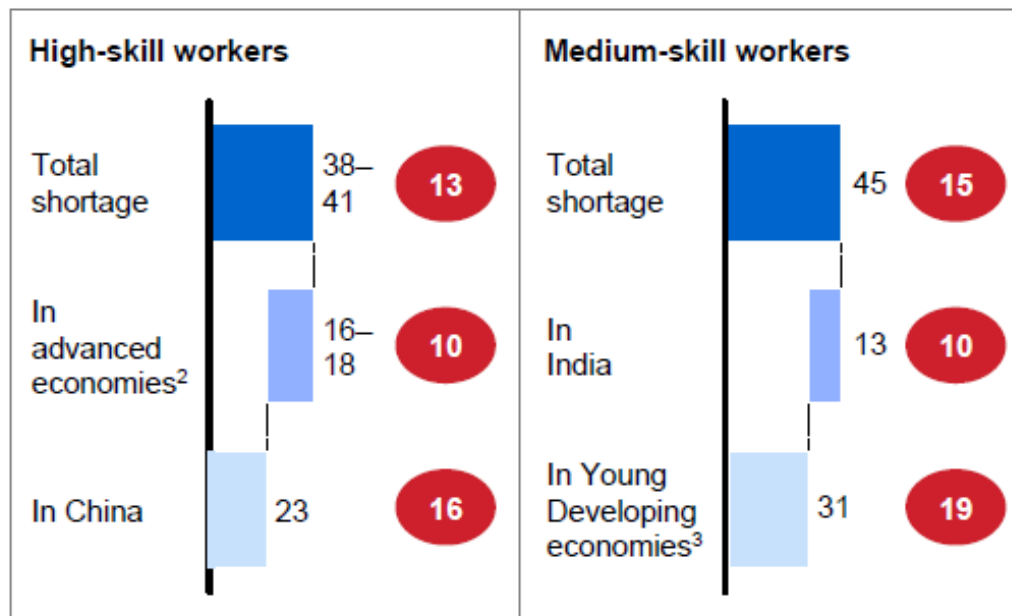To help them, we need to understand HOW they use and apply knowledge

In the "momentum" case, the world is likely to have too few high-skill workers and not enough jobs for low-skill workers

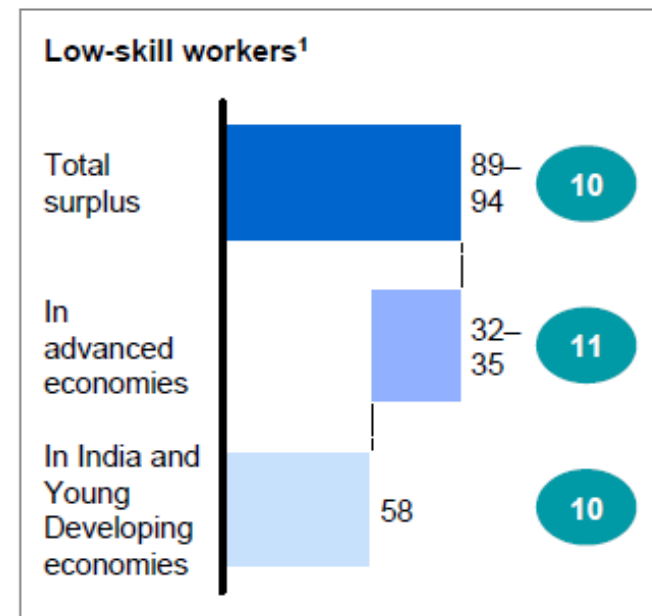**Gap between demand and supply of workers by educational attainment, 2020E**
Million workers

● % of supply of skill cohort
● % of demand for skill cohort

Shortages

High-skill workers

Total shortage	38–41	13
In advanced economies[2]	16–18	10
In China	23	16

Medium-skill workers

Total shortage	45	15
In India	13	10
In Young Developing economies[3]	31	19

Surpluses

Low-skill workers[1]

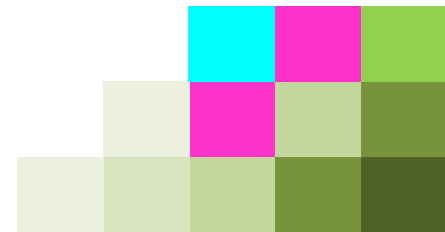|		
Total surplus	89–94	10
In advanced economies	32–35	11
In India and Young Developing economies	58	10

1 Low-skill defined in advanced economies as no post-secondary education; in developing, low skill is primary education or less.
2 25 countries from the analyzed set of 70 countries, that have GDP per capita greater than US$ 20,000 at 2005 purchasing power parity (PPP) levels in 2010.
3 11 countries from the analyzed set of 70 countries, from South Asia and sub-Saharan Africa, with GDP per capita less than $3,000 at 2005 PPP levels in 2010.

SOURCE: McKinsey Global Institute analysis

Agenda:

2.   Mining Social networks

process sphere
Innovation driven BPM
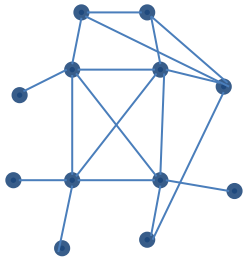
Social Network Configuration

Social Network Configuration

Social network patterns usually emerge according to:

• **Centrality of relationships**: It is the existence of people, organizational units or business units that assume a dominant position, either by formal recognition of authority or induction, imposing, controlling or actively participate in information flow, Participation magnitude can also be a function of charisma.

• **Number of participants**: Refers to the number of people, organizational units or business units that are active in a given context of process execution.
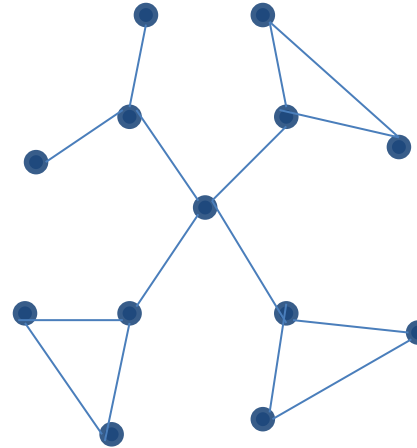
There are four standard types of social networks:
• Star networks.
• Star networks with multiple cores.
• Networks with multiple cores.
• Networks without cores.
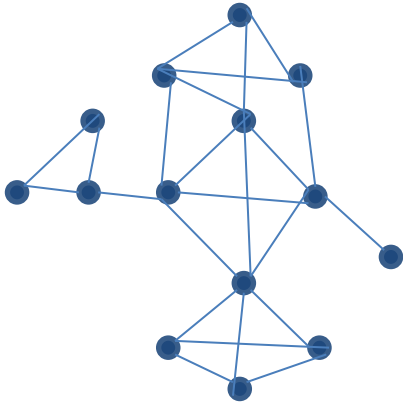
Multiple core networks

Characterized by the absence of dominant node and great relationships distribution among actors. There are no entry barriers and relationships are based according to the result to be achieved.
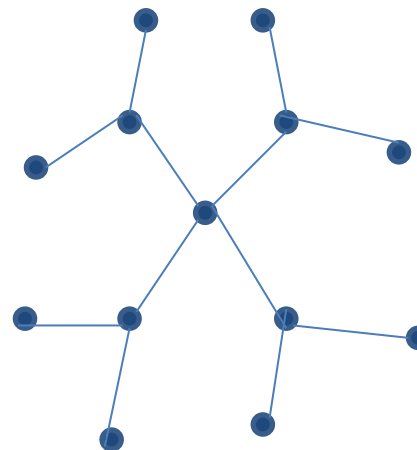
Star networks with multiple cores

Characterized by dominant node but that orchestrate the process around communities that maintain close proximity.
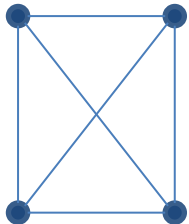
Networks without cores

Characterized by the absence of relational patterns usually emerge when there is a critical challenge for which there is no defined approach.

Star networks

Characterized being strong centralized and involve many agents who collaborate and communicate in accordance with the current organizational structure definition.

Challenge #1
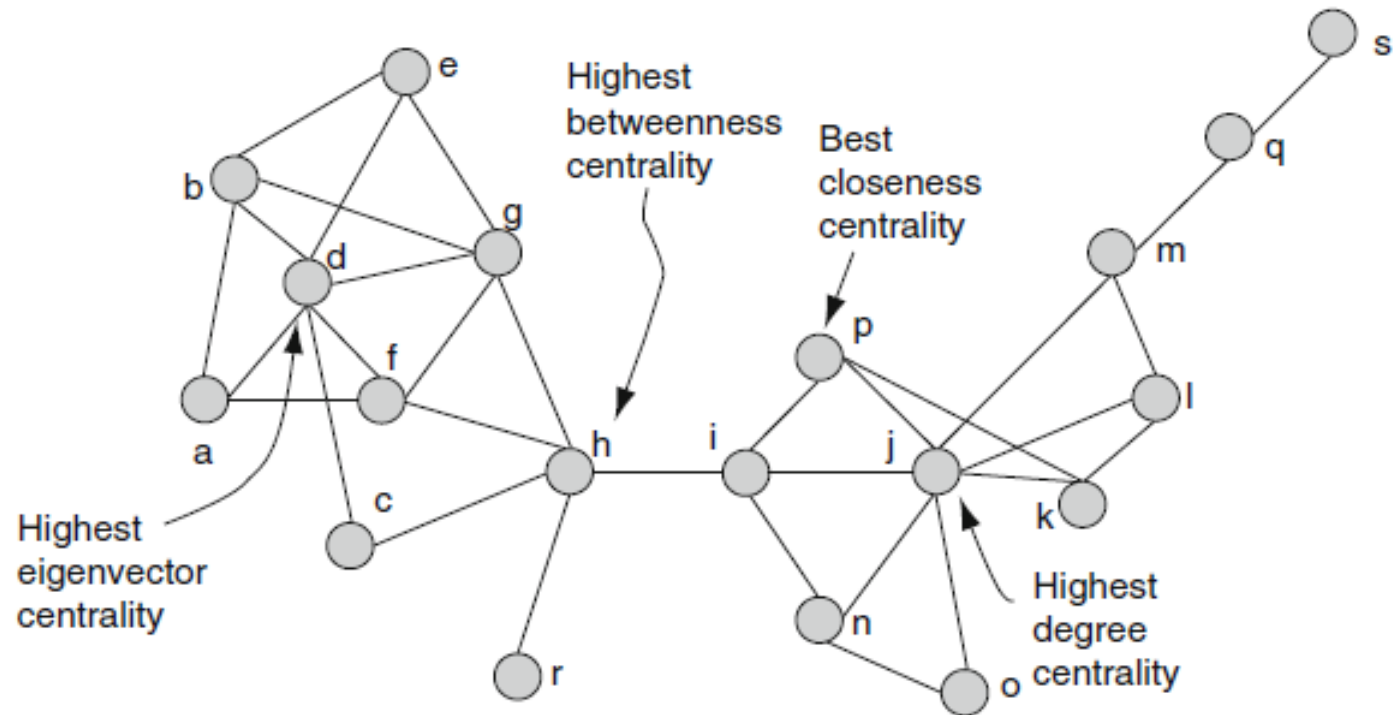Those beautiful patterns in previous page does not exist, unless the process is very simple

It will make you think and discover the nature of interactions instead of getting fooled by cognitive illusion of systems

Experience shows community clustering is difficult to identify in processes with to many agents
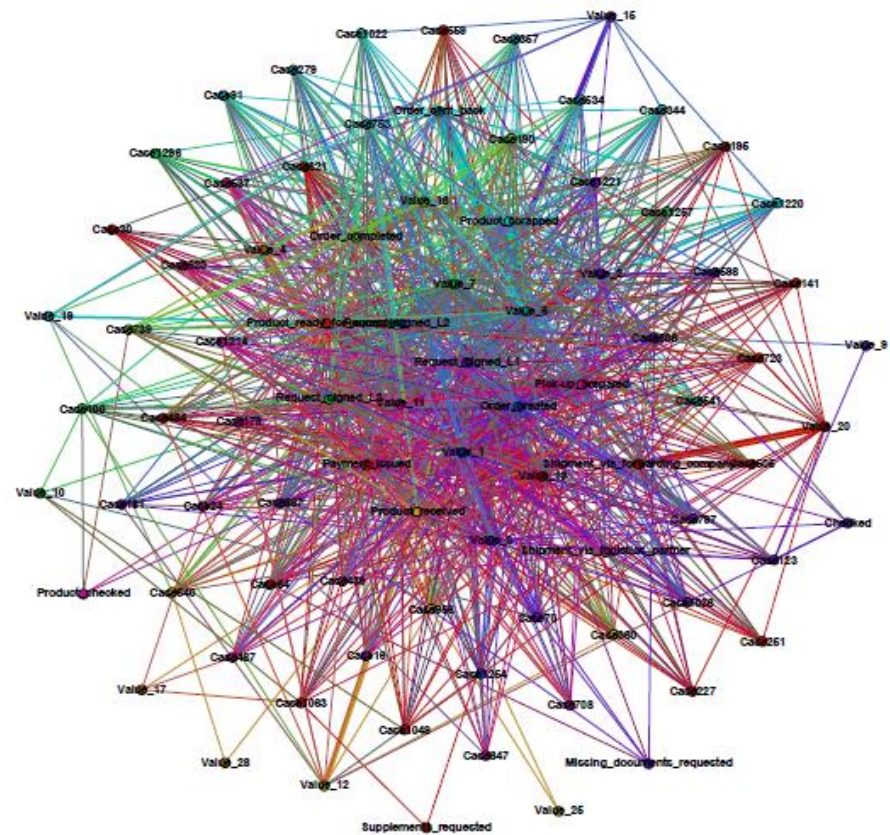
Claim management process. Identifying key players. Source: Process Sphere
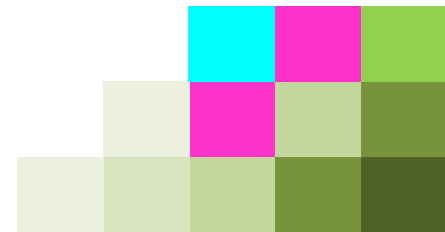
Network centrality algorithms neglect alignment with the type of business process definition


Discovering Sets of Key Players in Social Networks - Daniel Ortiz-Arroyo

Here are the network stars. Does this make sense? These are the ones that should command and control?

Claim management process. Identifying key players. Source: Process Sphere

This network is more loosely coupled, but why the agents repeat and reprocess tasks?

Claim management process. Identifying key players. Source: Process Sphere

Agenda:

3.   Mining knowledge

process sphere
Innovation driven BPM
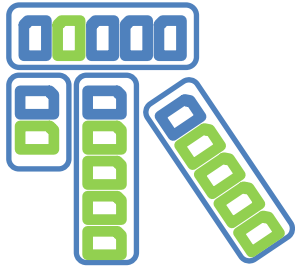
Knowledge type

Knowledge type

Knowledge can be organized around four main domains as outlined below.

• **Ordered**: It is the result of structured processes, where explicit knowledge is used, documented, regulated and can be applied in the abstract, in multiple circumstances. It is the sphere of good practices or practices that have been optimized over time within the organization.

• **Exploratory**: Typical of ad-hoc processes, where the implementation progress does not depend only on the completion of the preceding activity, but the existence of information, on which people interpret and make decisions. Actors in this field identifies a set of possible actions and choose the one that seems most appropriate to them in a blend of patterns and best practices.

• **Complex**: This is the area of adaptive processes where the sequence of activities are defined by the performer according to executing conditions. Some of the solutions may become best practices and reused in the ordered regime.

• **Chaos**: Emerge in crisis situations (or if there is a "company of heroes"). There are no way pre-defined actions. Actors acts, measure the impact and adjustments until a controlled environment is reached. It may also be related to the emerging knowledge discovery (for example associated with R & D).
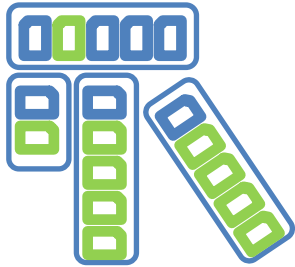
Knowledge type

Each of the knowledge domains is characterized according to the attributes of Codification, Abstraction and Diffusion

Knowledge type

Domain	Codification	Abstraction	Diffusion
Ordered	■ ■ ■ High Explicit. Everithing is documented.	■ ■ ■ High Abstract. Can be used in different situations	■ Low Restricted. The same actors perform.
Exploratory			
Complex			
Chaos	■ Low Tacit. It's the experience that counts.	■ Low Concrete. Only applies to a single or few situations	■ ■ ■ High Ubiquitous. Open communication channels

Based on Knowledge Assets - Max H. Boisot

Challenge #2
How people DO use knowledge?

How can we help people to make better decisions and have access to information

Something to start with. This pattern allows to clarify how the company is applying knowledge
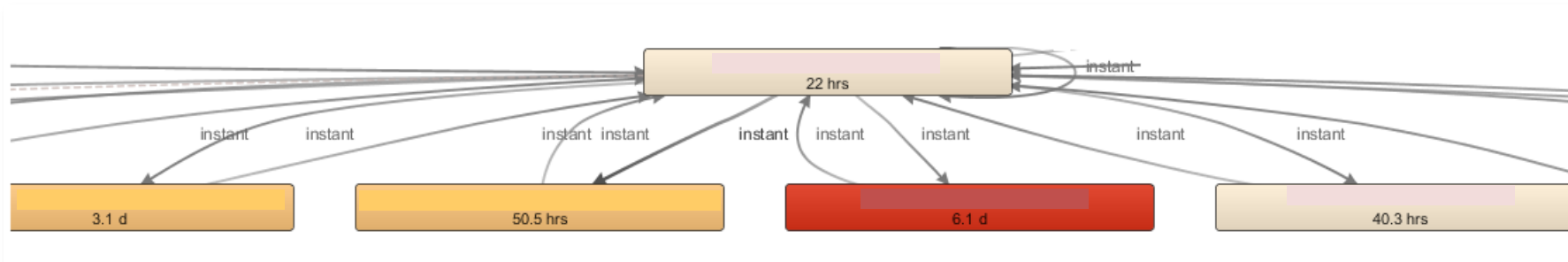
Claim management process. Source: Process Sphere

Codification
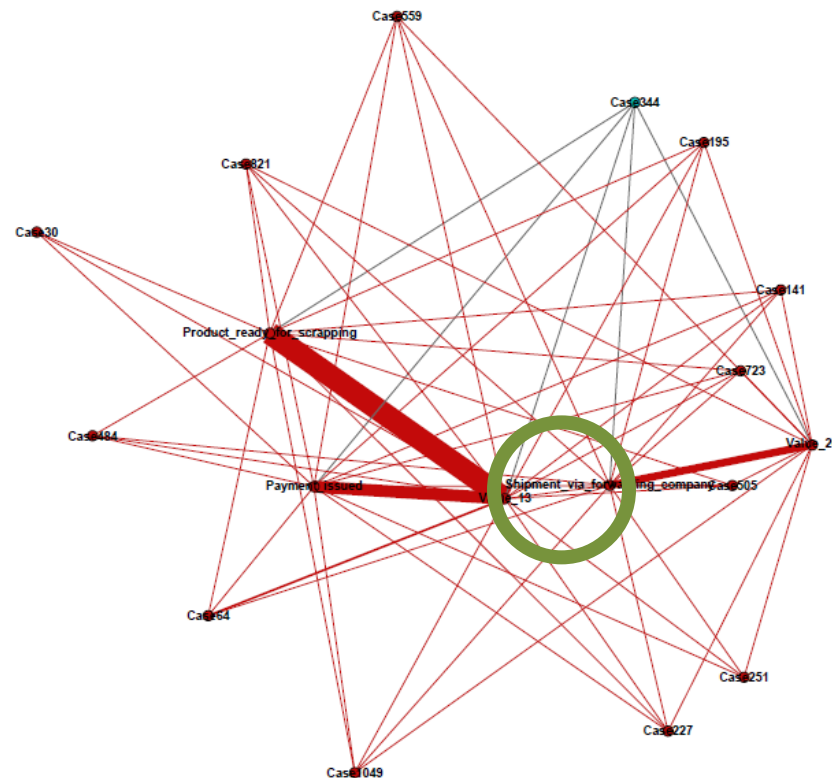
■ Low
Tacit. Solutions are not documented

Abstraction

■ Low
Concrete. Solutions are customized over an over again

Diffusion

■ ■ Medium
Open communication flows between a pre-defined set of actors (rule based)

The fine line between where the action occurs, mean if it's broken knowledge will not flow

Claim management process. Source: Process Sphere

Agenda:

4.   Mining process types

process sphere
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Process type

Process type

Process are not from a single flavor anymore. Today it's possible to find a very pre-defined type, but also a blend of every type available across multiples process instances.
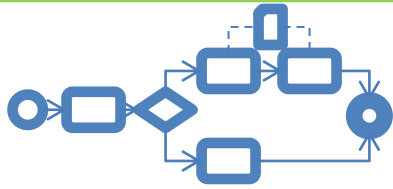
Type	Model	Goals	Behavior
Structured	■ ■ ■ Rigid Specify exactly activity sequence (relay or step by step)	■ ■ ■ Fixed Achieve the same goal over and over again	■ Pre-defined It's not possible to change behavior if an unpredictable event occurs
Ad-hoc			
Adaptive	■ Flexible Activities are defined on the fly, taking into consideration the goal to be achieved. Every process instance can be ultimately be unique	■ Changeable Goal changes according process instance challenge	■ ■ ■ No restrictions Behavior changes if any of process condition also changes (signal, goal, result)

Challenge #3
How to understand what process type we are looking at?

The structured ones are easy to find, but Ad-hoc and Adaptive put extra challenges, particularly if parts are blended with structured ones

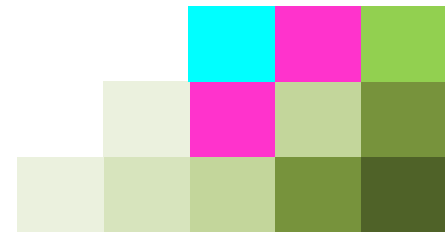# This is an Ad-hoc process type, because it is a rule constraint based process

Claim management process. Source: Process Sphere

Agenda:

5.   Aligning social, knowledge and process types
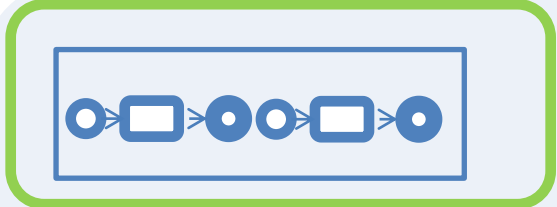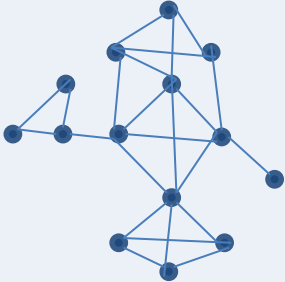
process sphere
Innovation driven BPM

Challenge #4

Information is not stored anywhere in particular. Rather, it is stored everywhere. Information is better thought of as "evoked" rather than "found" (*)

How to align everything together?

(*) D. Rumelhart and D. Norman, "A Comparison of Models," in G. Hinton and J. Anderson, eds., "Parallel Models of Associative Memory,"
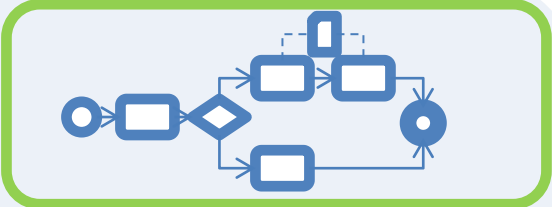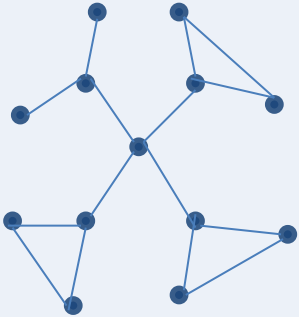
Adaptive

Ad-hoc

Complex
- DETECT – BUILD - EXECUTE

Exploratory
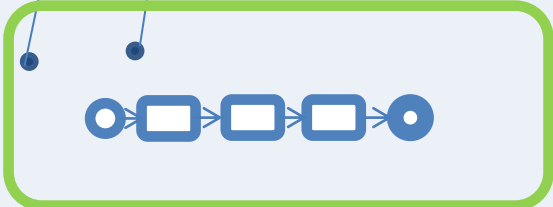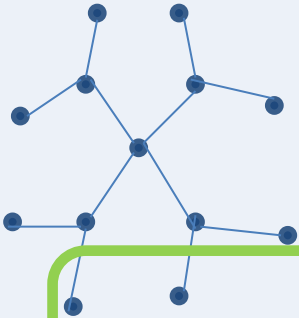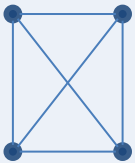- RECEIVE – ANALYZE- EXECUTE

Chaos
- EXECUTE - MEASURE - EXECUTE

Ordered
- RECEIVE - SORT - EXECUTE

Undefined process

Structured process

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