University of Pisa
MSc in Computer Engineering

Systems for Strategic Management and Support

LECTURE 12

http://www.iet.unipi.it/m.cimino/pdis/

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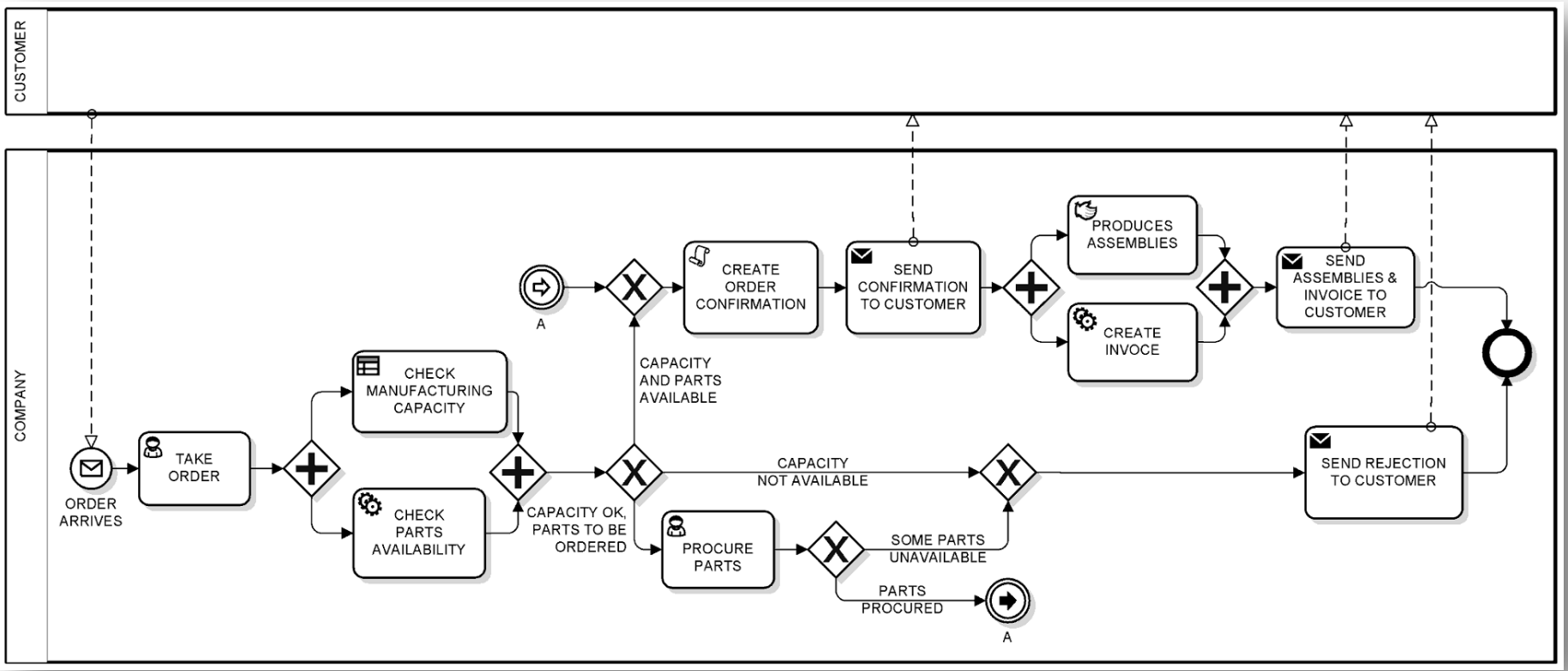
Manage orders in a manufacturing company

Order processing in a manufacturing company takes place after an order has been received from a customer. The order is first taken by an employee. Both manufacturing capacity and parts availability are then checked, via appropriated business rules and an automated information services, respectively. A rejection is sent to the customer if capacity is not available. Otherwise, if parts are also available, an order confirmation is automatically created and sent to the customer. Therefore, both assemblies and invoice are then produced, by human operatives and an automated information service, respectively. Finally, assemblies and invoice are sent to the customer. In contrast, if there are parts to be ordered, an employee procures such parts, so as to allow the aforementioned process to be continued, once such parts are available. However, if some parts are still unavailable (they cannot be procured), a rejection is then sent to the customer.

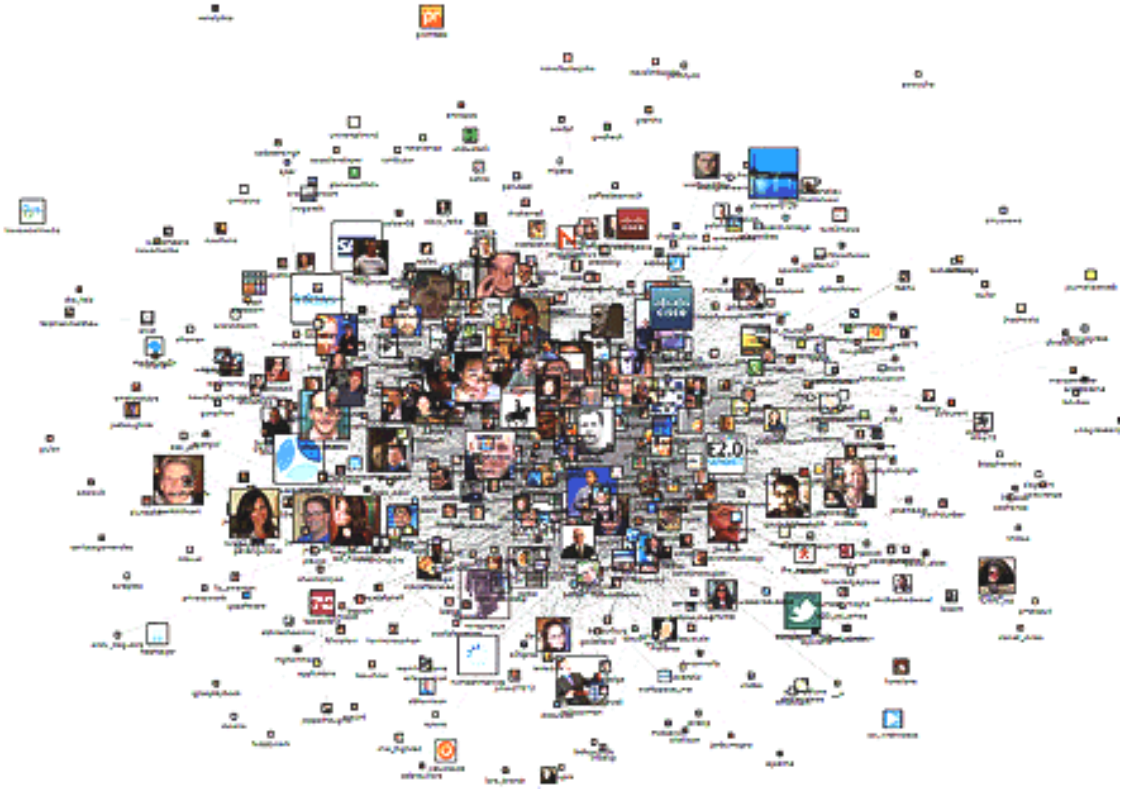
The BPMN model of the manufacturing company



Introduction to *enterprise 2.0*

- With the advent of the Web, organizations from all sectors deploy online business processes, to reach customers, employees, suppliers and stakeholders.

- Online availability is not sufficient for an optimal fruition of services and applications: the success of social networks has demonstrated the centrality of **communities**, whereby users and companies can interact with service providers, consumers, and among themselves, to be informed, share experience, and express their opinion on the quality of a service.



- This "socialization" of the users' online experience, for customers, citizens, or employees, will carry over to the business processes of organizations, changing the paradigm of Business Process Management, from "closed" to "open and social".

Social BPM is a concept that describes collaboratively designed and iterated processes (→ also *social enterprise*, *enterprise 2.0*)

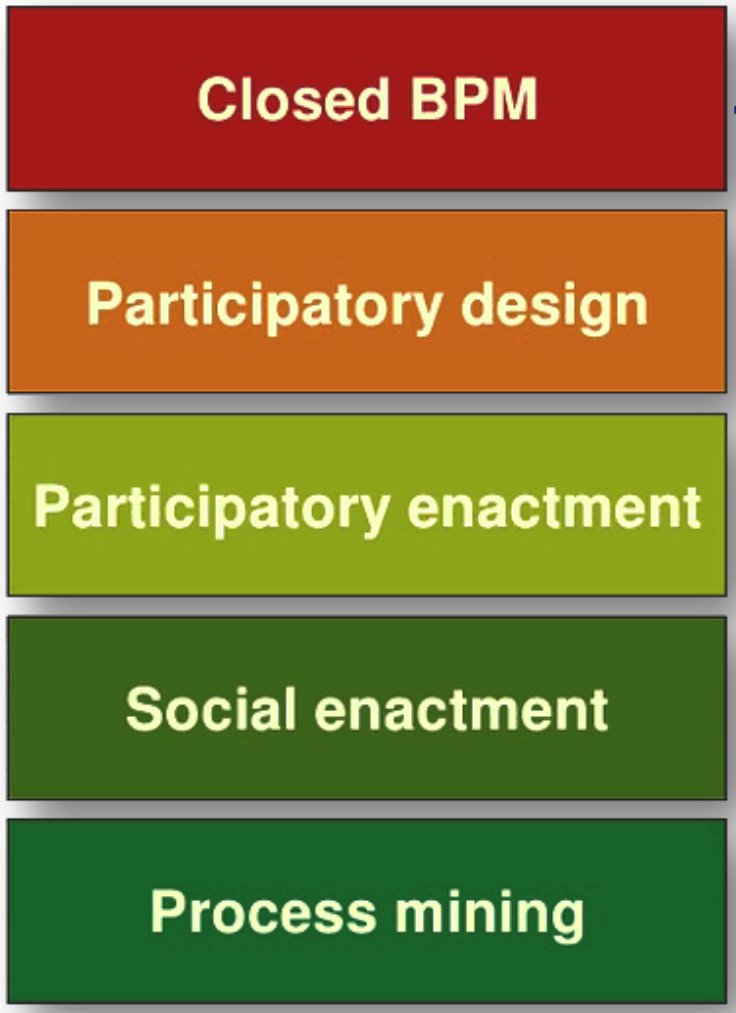
It can support B2B organizations, especially SMEs, to exploit the flexibility of Social Business Processes Design and deployment

Projects and Companies:

- BPM4People, www.bpm4people.org, European Project
- Web Models s.r.l., Spin-off from the Politecnico di Milano University

Coordinator Funding Agency Partners

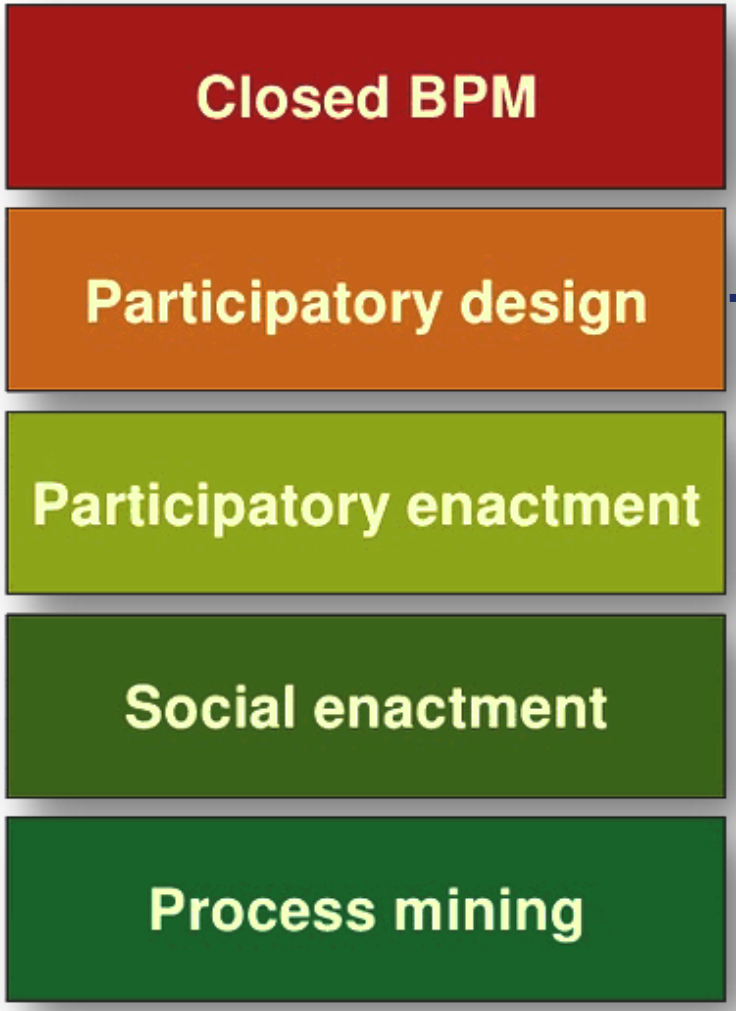
The Social BPM Space: a continuum from closed to open social BPM, where each organization can find the mix of control and flexibility needs



Closed BPM

- traditional approach supported by state-of-the-practice BPM suites
- the schema of the process is decided centrally (top-down) and deployed to an execution platform
- tasks are defined rigidly, the process actors are preregistered
- allocation of actors to task follows statically defined assignment and escalation rules
- the communication among the actors is channeled through the task execution interfaces, with the exception of notifications, which can be delivered through informal channels (email, SMS)

The Social BPM Space: a continuum from closed to open social BPM, where each organization can find the mix of control and flexibility needs



Participatory Design

- process design is open to multiple actors.
- stakeholders can actually participate to the definition of the process model
- multiple process versions can be fused into one shared process model, e.g., after merger and acquisition, when companies have to align different versions of the same process

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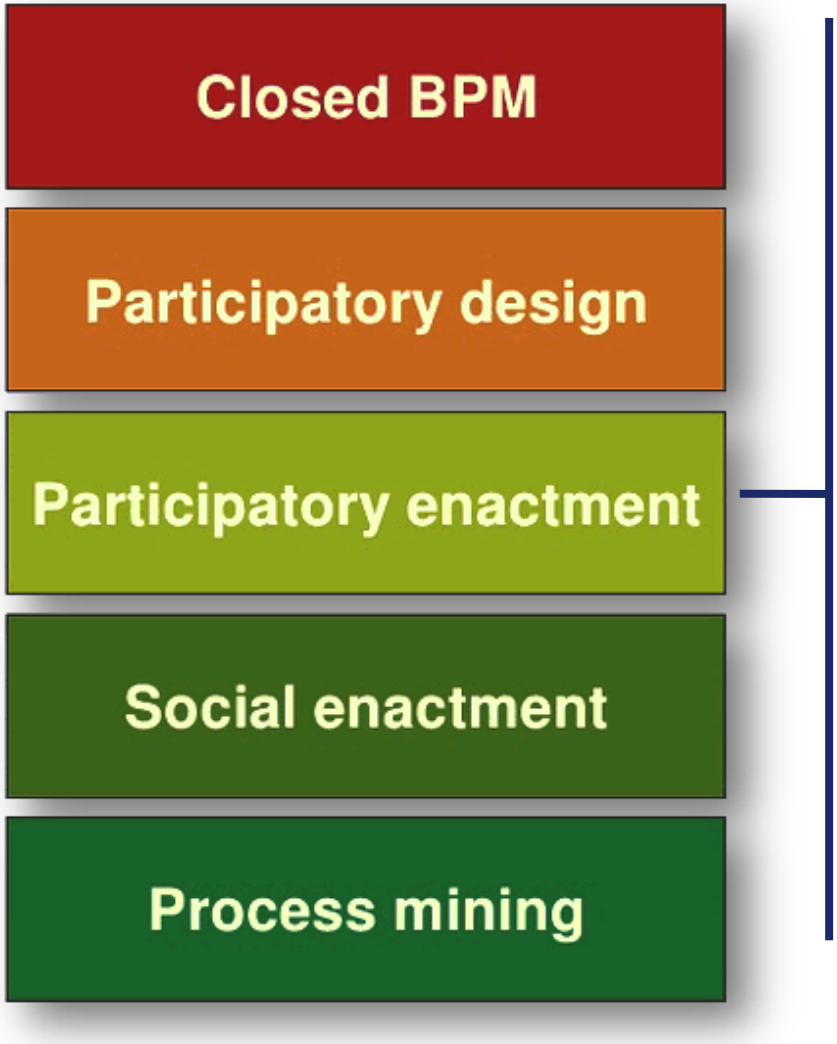

Participatory Enactment

- process enactment: the use of software to support the execution of operational processes
- the focus of socialization is shifted from design to enactment
- although actors are fixed, as in closed BPM, the communication is not restricted to the input and output of activities
- typical functions of social tools are integrated into the process enactment application to support collateral communications
- E.g. following up the status of tasks, commenting on the result of task execution, voting on quality of service

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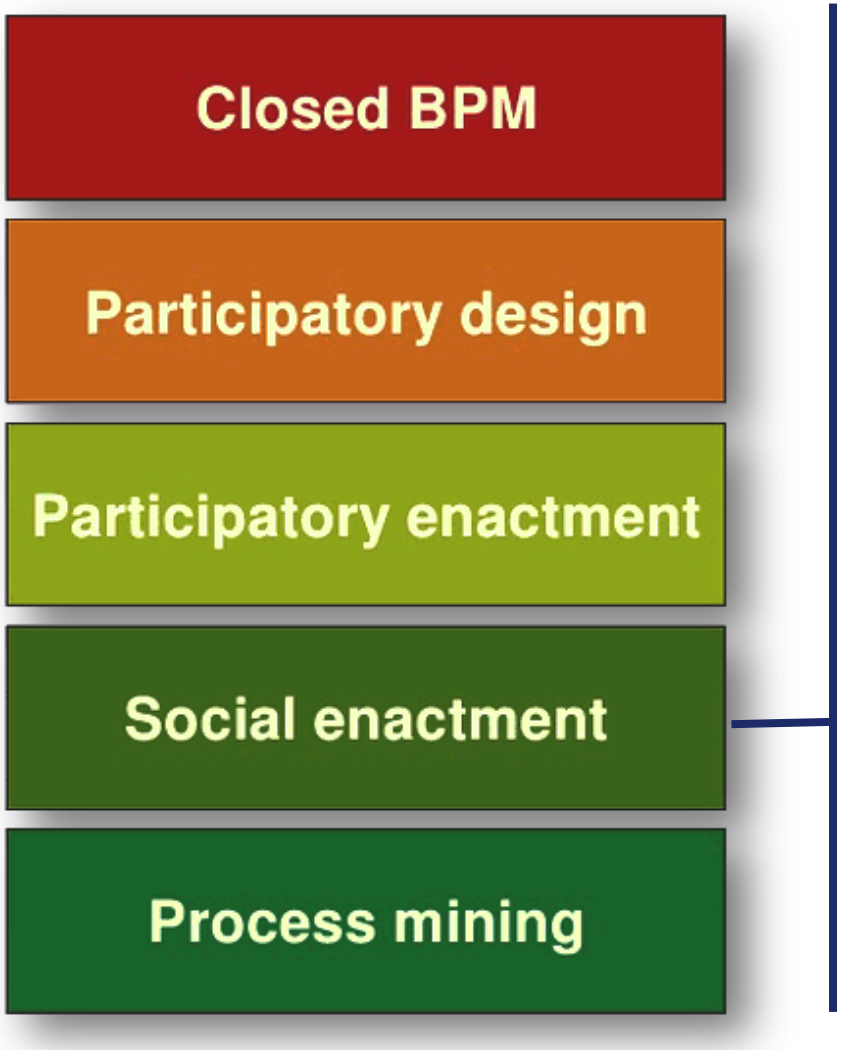

Social Enactment

- It implies opening the process execution (at least in part) to actors that are not known at process deployment time and allowing the collective execution of a task.
- Social task execution can take a variety of forms: from the most structured (like using **crowd-sourcing** platforms for micro tasks execution) to less controlled forms (like community-based product and content rating, cooperative software development and testing)
- the common denominator of social task execution is the capability to launch a task to be executed by an open-ended community of performers and to monitor its progress until completion.

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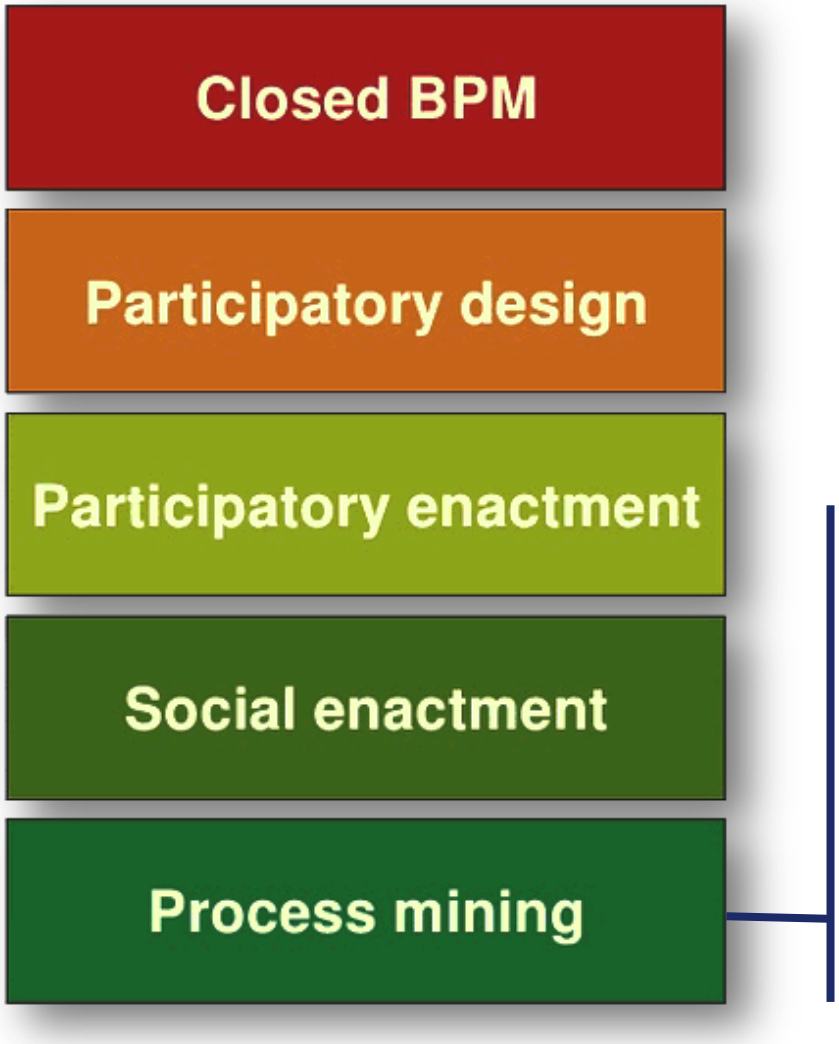

Process Mining

- It is the less structured approach
- activities are executed by using an emergent approach (self-organization)
- the process constraints are recovered a posteriori, by observing the behavior of the actors, e.g., inspecting execution traces (logs)

Social Design Patterns: solution to recurrent scenarios where cooperative tasks are executed using social software.

a) Dynamic enrollment: involving people external to the process. Enterprise Social Network (ESN, such as *Yammer*, *Jive*, *LinkedIn*) are exploited for inviting external actors of a social pool to sign into the process and to start contribute.

b) Poll: cooperating to a social decision. An internal performer publishes to a ESN an invitation to answer to a question, with a termination condition (e.g. deadline) after which contributions are collected and used to produce the decision.

c) People/skill search: Finding competencies for an activity. The ESN is exploited to find people with required expertise, via a call-for-people, ending with the selection of the right candidate

d) Social publication: a process artifact is published to the ESN, with a termination condition, e.g. a required number of content views/comments.