University of Pisa

MSc in Computer Engineering

Systems for Strategic Management and Support

LECTURE 13

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

Mario G.C.A. Cimino

Department of Information Engineering

S289   **Social BPM** is a concept that describes collaboratively designed and iterated processes ($\rightarrow$ also *social enterprise*, *enterprise 2.0*)

S290   It can support B2B organizations, especially **SME**s, to exploit the flexibility of Social Business Processes Design and deployment

References:

- BPM4People, www.bpm4people.org,

  European Project

- Web Models s.r.l., www.webratio.com,

  Spin-off from the Politecnico di Milano University

S291

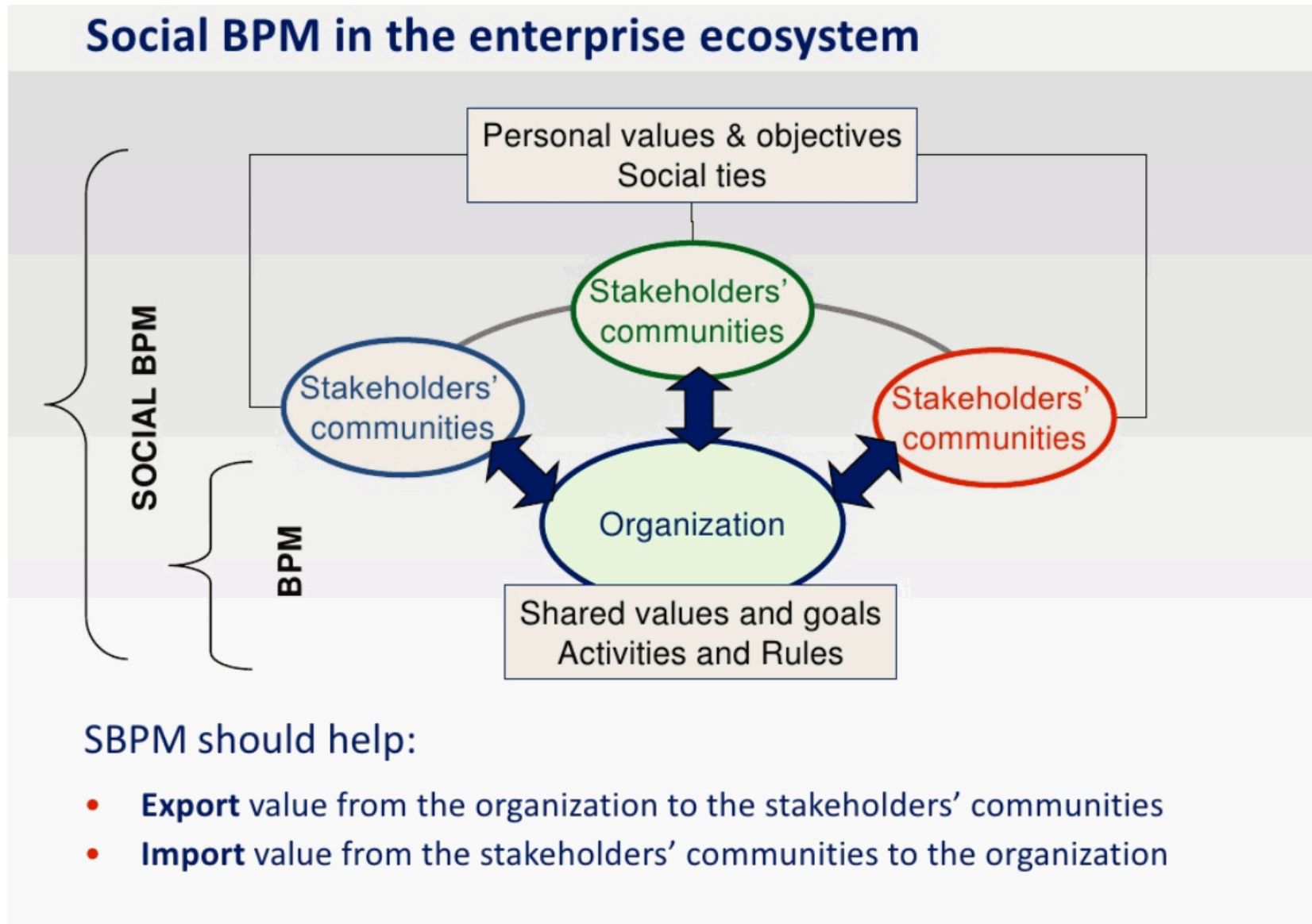## The Social BPM Space

A continuum from closed to open social BPM, where each organization can find the mix of control & flexibility it needs

Closed BPM	Process model decided top-down and hard wired, task assignment rigid, communication limited to task input-output
Participatory design	Process model resulting from merge of different models (e.g., merger&acquisition), task/flow variants
Participatory enactment	Actors are fixed, but can communicate with social tools (e.g., follow up a task, tweet on a task status, etc)
Social enactment	The community of actors can be (in part) open: e.g., launch a task to be executed in Facebook, find an expert in LinkedIn, vote for alternative flows
Process mining	Process model is partial or absent. Process constraints are mined and progressively enforced by observing community behaviors

S292

Social BPM in the enterprise ecosystem

SBPM should help:

- **Export** value from the organization to the stakeholders' communities
- **Import** value from the stakeholders' communities to the organization

SBPM as a semi-structured process
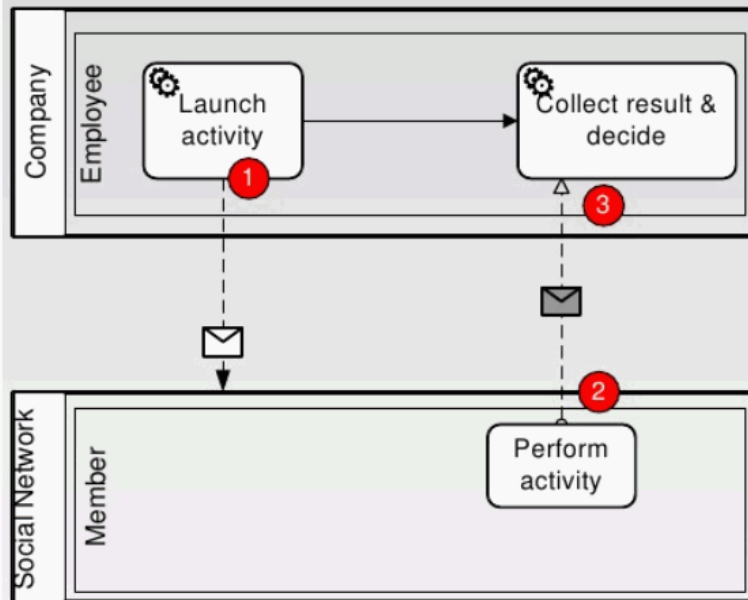
1. **Activity start**
   - How to choose the performers:
     - By expertise
     - By network centrality
     - By trust
     - By seed + propagation

2. **Activity end**
   - How to determine the end event
     - After a time delay
     - When a structured condition is met (e.g., #likes > X)
     - When a semi-structured condition is met (when activity drops below a threshold)

3. **Information extraction**
   - How to extract sense from the community activity
     - Text classification and summarization
     - Pattern recognition
     - Sentiment analysis

S294

Representing Social BPM requirements

Idea: extending BPMN with stereotypes for expressing:

- The participation of dynamically enrolled actors (→ social pools with different roles)

- The execution of activities by such actors (social tasks)

- Events for controlling the execution of tasks by social actors

Role type	Internal performer	Internal Observer	External Observer
Icon			
Description	Directly affect case and activity advancement	May produce events and artifacts that indirectly affect case and activity advancement	Can be informed and participate through social network platforms

Task type	Social broadcast	Social posting	Invitation to activity	Commenting	Voting	Login to join	Invitation to join a network	Search for actor's information
Annotation icon								
Description	Data flow to a community pool	Data flow to a single user in a comm. pool	Dynamic enrolment to a task in the process case	Comment the activity	Voting (y/n) on an activity, either within a social network platform or directly in the BPM system	Login using a social profile	Invitation between community users	Lookup query to the community to search for an actor with specific profile attributes

Requirement	Community-generated events	Event: New user engaged in the social community	Event: New social relationship link	Event: Invitation acceptance/rejection
BPMN notation				
Comment	(Generic) events raised by the community	An event is raised when a user dynamically enrolls to the process case	An event is raised when a user establishes a social relationship with another user	An event is raised when a user accepts/rejects an invitation

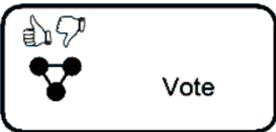(REMEMBER JUST SOME EXTENDED BPMN ICON SAMPLES)   **6 of 20**

S295   Model-driven approach: a model process can be deployed and executed (zero code).

S296   It is important to define design patterns, via a BPMN 2 extension to enable the coverage of the social aspects

S297   Extend the Send task with social behavior: a social actor in a social pool performs some social activities, such as Publish, Comment, Vote, Rank, Invite.

S304

The **SocialBehavior** task has attributes that correspond to different expected behavior from actors in a social pool.

Attribute value	Icon / Example
Comment	Comment
Vote	Vote
Invite	Invite
Rank	Rank

S298 The attribute **Publish** for the SocialBehavior task refers to a task that sends a message from a regular pool to a social pool.

S299 The target of the send task can be of three types:

S300 Broadcast sends message/invitation to the whole social network (SN);

S301 • Multicast sends a message to a selected subset of SN participants;

S302 • Unicast sends an invitation to a specific user of the SN;

S303

Audience scope	Visual description	Icon
Broadcast	White envelope with a thick arrow pointing to the social network audience	Invite to vote on the poll
Multicast	White envelope with 3 small arrows pointing to the social network audience	Invite to vote on the poll
Unicast	White envelope with a one single arrow pointing to the social network audience	Invite to vote on the poll
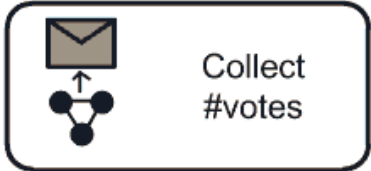
S305 The **SocialMonitoring** task extends the ReceiveTask

S306 It is a task initiated by an actor in a regular pool for checking the status or the advancement of the social feedbacks from a social pool.

S307 The actual type can be: ReceiveSocialContent or ReceiveSocialEvent

S308

Attribute value	Icon
ReceiveSocialContent	Review comments
ReceiveSocialEvent	Collect #votes

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S309 Role Types: icon, provenance, description

S310

Role type	Icon	User Provenance	Description
Internal performer		Formal roles in the BPM definition, specified at design time	Directly affect case and activity advancement
Internal Observer		Communities of users known at design time (e.g., members of the organization)	May produce events and artifacts that indirectly affect case and activity advancement
External Observer		Communities of users not known a priori, dynamically registered in the process	Can be informed and participate through social network platforms

S311 Application-level patterns: best practice solutions to recurrent scenarios where cooperative tasks are executed using social software

S312 Application-level patterns may exploit control-flow level patterns (www.workflowpatterns.com), do not aim at substituting or complementing them

S313 **Pattern #1: Dynamic enrollment**

The aim is to support the involvement of people external to the process. Platforms like enterprise and public social networks are exploited for dynamically adding new actors to social activities. Example of enterprise social network are Yammer (www.yammer.com) and Jive (www.jivesoftware.com); of public ones are Facebook, LinkedIn and Twitter.

S314

Pattern #2: Poll

The aim is to collect input from a community of users cooperating to a social decision. An internal performer publishes to a social platform a question (e.g., an open or closed list of options to choose from). Internal/external observers receive an invitation to participate in the poll and contribute with their choices.

S315

Pattern #3: People/skills search

This pattern focuses on finding the right competencies for performing an activity. A social community is exploited to find people with required expertise, considering the trade-off between level of expertise and social distance. The process usually consists in publishing a call for people, to which internal/external observers respond.

S316 ## Pattern #4: Social publication

This aims at making a process artifact visible to social actors, e.g., by posting a document to a social platform. Artifacts contain limited views of the process status or of the associated content, which is shared with the community.

S317 ## Pattern #5: Social sourcing

The purpose is delegating an activity to one or more social actors. Internal performers publish the description of the work and share a resource link to start contributions. Internal/external observers contribute to the execution of an activity, e.g., by co-authoring or enriching socially produced documents, e.g., through tagging.

S318 **Pattern #6: Advancement notification**

This pattern aims at informing social actors about process advancement, for instance by using micro-blogging platforms like Twitter to keep the users updated, thus increasing transparency and involvement.

S319 **Pattern #7: Feedback**

This pattern focuses on acquiring qualitative/quantitative feedback from social actors by asking internal/external observers to rate some content or to insert comments into the social platform.
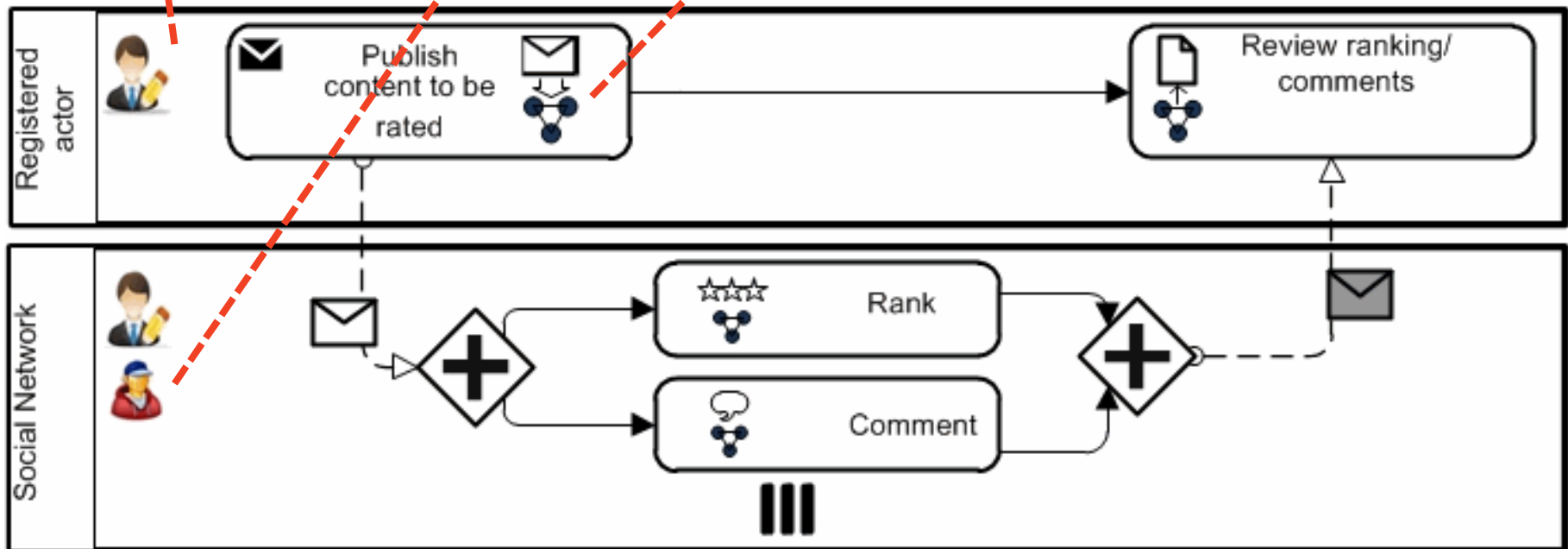
Example: A specific social sourcing, namely the tagging case

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Case Study: **e-democracy**, a form of government in which all adult citizens are presumed to be eligible to participate equally in the proposal, development, and creation of laws.
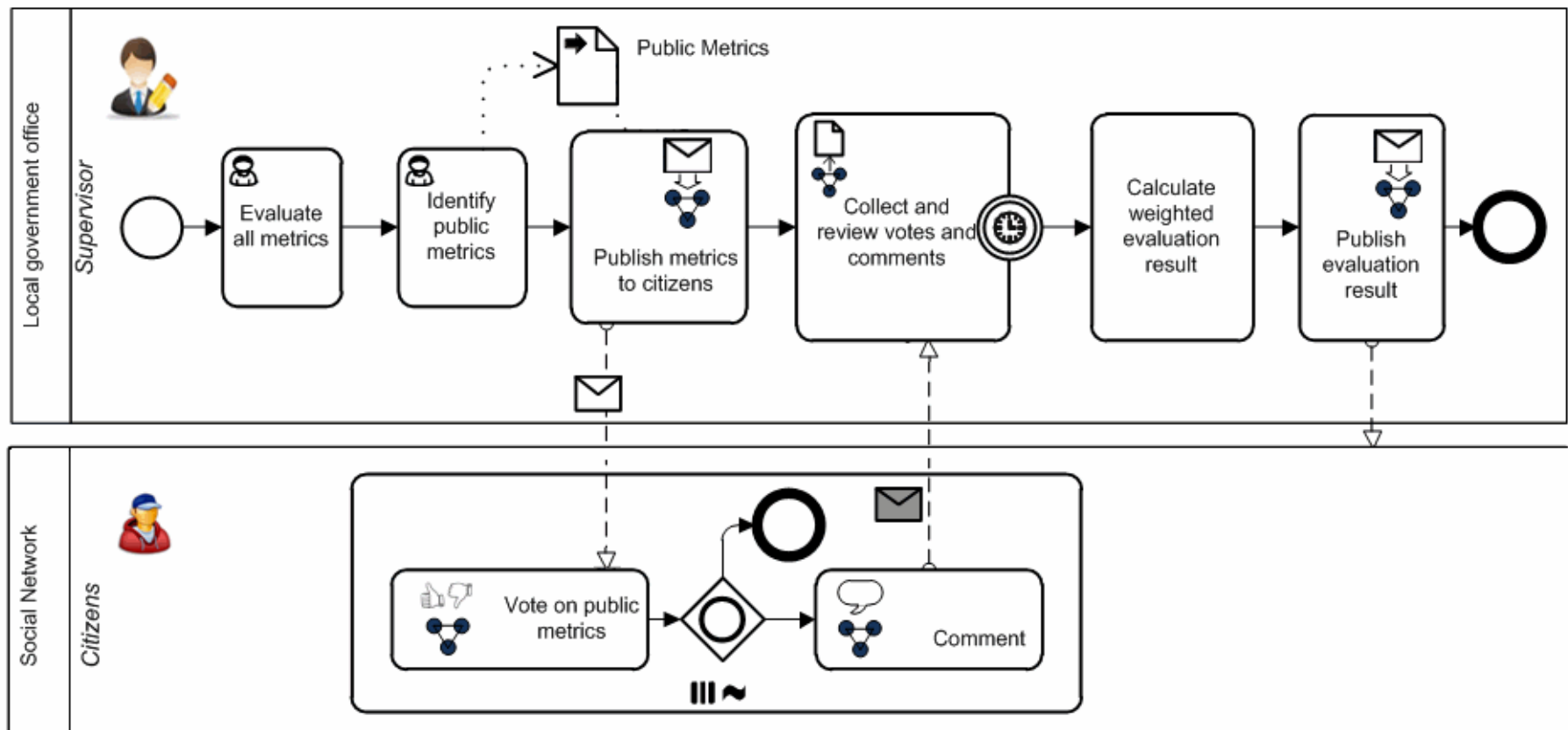
Demo: social scheduling of a business meeting

Imagine a scenario in which the director of a business needs to look for stakeholders in an specific area and define a time to meet all of them.

It is necessary to socialize the process in such a way that everyone is able to select the dates when he/she will be available.

The director logs in into the application by using one of his social network credentials (e.g., LinkedIn credentials). Then, he can search for professionals in some industry area among his contacts.

The search activity is supported by the social platform he is connected to, so he can use a great amount of social data without leaving the application and loosing context.

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Using the results of the query, the director selects the people to whom invitations will be sent to setup the meeting date.
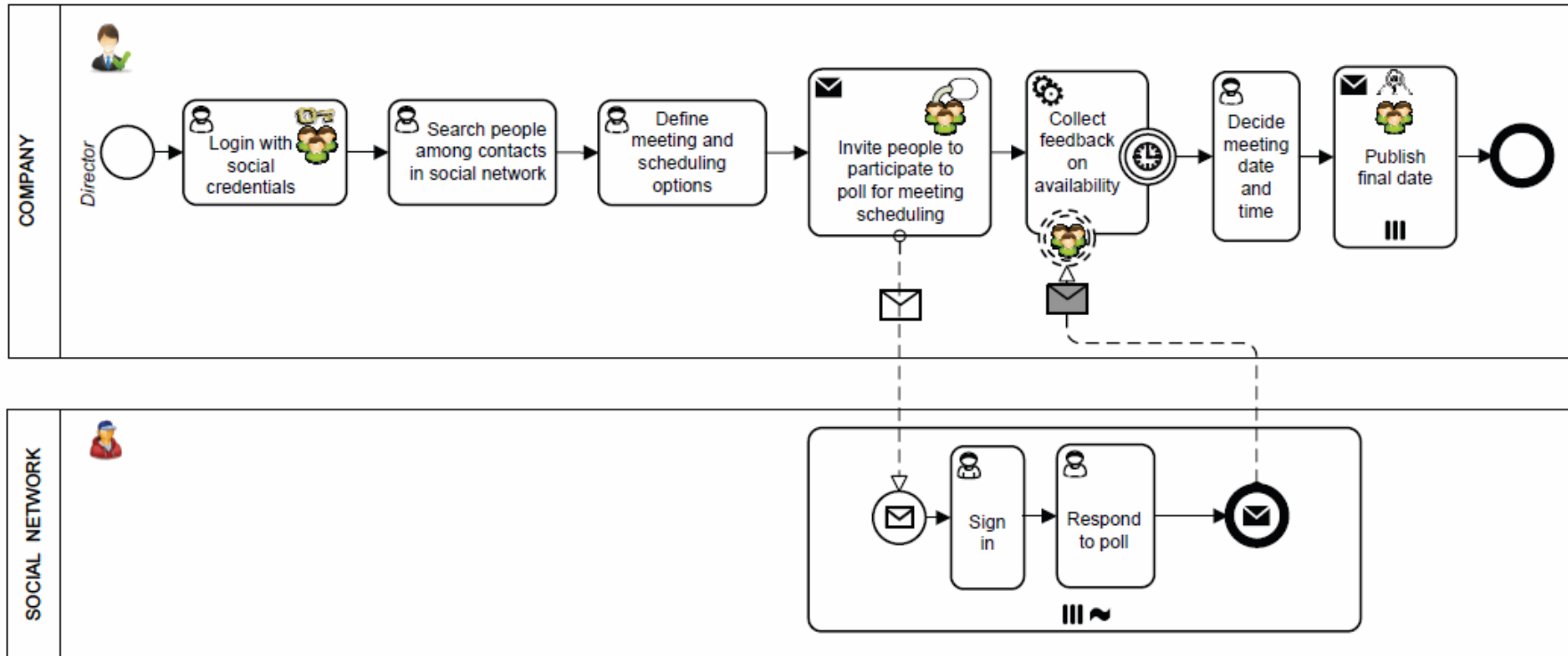
Once the professionals to be invited are selected, a poll is created and the people are invited to mark their preferences among a predefined list of dates.

The Director introduces the information needed to automatically generate a poll within a free online application (e.g., the popular Doodle platform) and the system generates a message sent to all of the social (LinkedIn) inbox of all participants.

The message contains all the details to participate in the poll. This activity is represented as a message to a social pool where actors are enrolled dynamically and are able to create input in the process without being previously registered in the system. The process finishes when the Director chooses the final date for the meeting and publishes it.

Demo: social scheduling of a business meeting

A complete example