

Process-driven Information Systems

LECTURE 2

<http://www.iet.unipi.it/m.cimino/wdis/>

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Workflow Modeling

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How to name a process

(Readings: pp. 40-46, Sharp, *Workflow modeling*, 2009)

A01) The process name must be in the form *verb-noun*

e.g. *Assign Inspector*.

A02) It might be in the form *verb-qualifier-noun* or *verb-noun-noun*

e.g. *Assign Backup Inspector*, *Assign inspector to route*

A03) Processes are almost always defined in the **singular**

e.g. ~~*Handle Orders*~~ → *Fill Order*, i.e. an (a specific) order.

A04) The verb-noun name must indicate the **result** of the process.

A05) **Guideline: if you flip the terms around into 'noun is verbed' form, the phrase should indicate the result of the process**

e.g. *Assign Inspector* → *Inspector is Assigned*

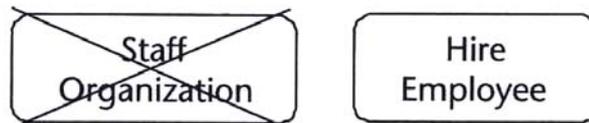
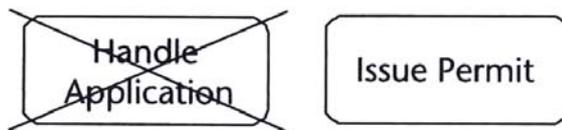
A06)

Examples of Potential Processes

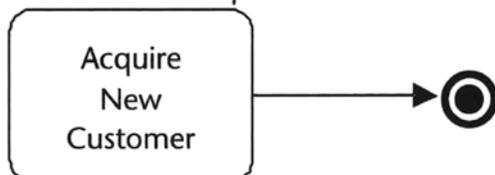
<i>Suggested Process</i>	<i>What We Call It</i>	<i>If Not a Process, Why Not?</i>
Customer Relationship Management	Process area	Doesn't deliver a single, specific result; a set of related business processes meeting an overall objective.
Acquire New Customer	Business process	Delivers a single, specific result, and meets all other criteria in this section. An "end-to-end business process."
Assess Prospect Financial Status or Set Up Customer	Subprocess	Too small—both deliver specific results, but are intermediate results in an end-to-end business process.
Calculate Customer Credit Limit or Create Customer Account	Activity, step, task, ... (no specific term)	Much too small—a part of a subprocess. Possibly described in a procedure, or use case and service.
Determine Customer Credit Limit or Set Customer Account Type	Activity, step, task, ... (no specific term)	Much, much too small—a single step or instruction. Possibly one line in a procedure, or step in a use case.
"The Inside Sales process"	Function	Doesn't deliver a single, specific result; an organizational unit that participates in multiple business processes.
"Our Oracle CRM process"	System	Doesn't deliver a single, specific result; a system that supports multiple business processes.
"Our e-business process"	Technology	Doesn't deliver a single, specific result; a technology employed by multiple business processes.

A07) How to name a process

Process naming—singular, customer perspective.



Process naming—name indicates process result.



Process:
Acquire New Customer
(action verb – noun)

Result:
New Customer is Acquired
(noun is verbed)
• discrete
• countable
• essential

A process delivers a specific, essential result

The process result in 'noun is verbed' form must meet 3 criteria:

A08) **The result is discrete and identifiable:** you can differentiate individual instances of the result, and it makes sense to talk about 'one of them'

e.g. *Inspector is Assigned* → it makes sense in a business context to talk about *when was Joe assigned to the midtown route*

A09) **The result is countable:** you can count how many of that result you have produced in an hour, a day, a week, etc.

e.g. *How many inspector assignments were completed this week*

A10) **The result is essential:** it is fundamentally necessary to the operation of the enterprise, not just a consequence of the current implementation

e.g. *Fax Inspector Assignment* → the essence of the process has not been reached by the technology of notification → *Notify Inspector of Assignment* is ok ('what, not who or how')

A11) A process should be defined in terms of the essence of what it does, i.e., the result it delivers (what), not the technologies used to support it (how) or the organizations and roles that carry it out (who)

A12) Distinguish between result and objective:

- a *result* is the *output* of a single execution of a process
e.g. '*employee is hired* from the process *Hire Employee*'

- an *objective* is some desired state or performance target, generally over many instances

e.g. '*Hired employees will go on to have an average tenure of greater than five years*'

e.g. '*Fewer than 10% of newly hired employees will leave the company within the first year*'

A13) An *action* verb indicates a single activity that happens at a particular point in time, for which it is easy to visualize a result.

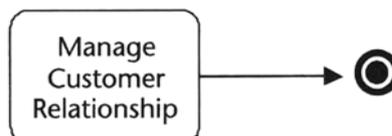
e.g. *count, evaluate, print, attach, return, prioritize, sort, provide Allocate Service Representative, Calculate Stock Index, Retrieve Sample, Issue Refund, Translate Document*

A14) Avoid mushy verbs: a *mushy* verb tends to indicate an activity or multiple activities that happen *over time*. While they might indicate some overall objective, they do not help us visualize a single, specific result.

A15) *Mushy verbs* are also called '360 verbs', as they sound good but often say little about what was actually accomplished.

A16) A list of mushy verbs you should avoid using, except when naming process areas or other broad groups of activities:

- *Maintain;*
- *Administer;*
- *Process;*
- *Improve;*
- *Facilitate;*
- *Track;*
- *Analyze;*
- *Coordinate.*
- *Manage;*
- *Handle;*
- *Do;*
- *Support;*
- *Drive;*
- *Review;*
- *Monitor;*



Process:
 Manage Customer Relationship
(mushy verb – noun)

Result:
 Customer Relationship is Managed
(noun is verbed)

- *not discrete*
- *not countable*
- *not an essential result (an objective)*

Process naming—no mushy verbs.

A17) When describing a process it is necessary to be able to identify the *triggering* or *initiating* event.

Event categories:

A18) *Action event*: it happens when a person or an organization decides to do something, for any reason. You cannot predict exactly when

e.g. a customer deciding to place an order, a manager deciding the company needs a new employee, a regulator deciding to issue a new guideline

A19) *Temporal event*: it happens when some predetermined date or time is reached at which some activity must begin. You always know exactly when it will next happens.

e.g. time to run the payroll, time to close the books, time to take inventory

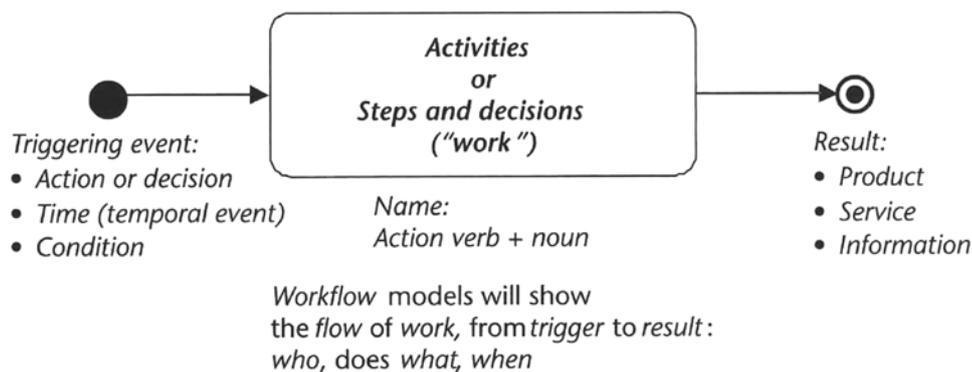
A20) *Condition or rule event*: it happens when a monitoring activity detects some exception condition. You cannot predict it in advance

e.g. a smoke alarm being set off, a stock price hitting a predetermined limit.

A21) Do not confuse triggering events and preconditions: the former is what happens to make the process/activity start, the latter is a rule that must be enforced after the process/activity starts to proceed. E.g.

- *customer initiates contact to report service difficulty* (triggering event)
- *customer is in active status* (precondition)

The figure represents the *trigger-activities-result* conceptual framework.



It is in contrast with input-process-output (which sounds mechanical)

Summary

A22) the process comprises an identified body of work that can be characterized as a set of related activities or a defined sequence of steps and decisions.

A23) the process name is (essentially) in action verb-noun format, although it might have a qualifier or another noun.

A24) The name is in the singular.

A25) The name, if put in "noun is verbed" format, will indicate the intended result (output) of the process.

A26) The result must be discrete and countable. If a mushy verb is used, these criteria will not be met.

A27) The result is what the customer of the process wants.

A28) The process is initiated by a triggering event that could be action, time, or condition.

A29) Rule-of-thumb: **NO RESULT → NO PROCESS**

Process and subprocess

A30) a business process generally has 5 ± 2 subprocesses

A31) a subprocess achieves a significant milestone to the achievement of the final result of the business processes and is often something that the organization would like to measure

A32) verify that within a single end-to-end business process it is the same "token" or "work item" that is moving through the process, although its state is being changed

Establish scope and contents of the process:

A33) WHAT the process is:

- a) Triggering events - *what* initiates the process?
- b) Results - *what* are the results expected by customer/stakeholder?
- c) Subprocesses - *what* are the main stages (5 ± 2) of the process?
- d) Cases - *what* are the major variations of the work item that lead to different flows?

A34) WHO is involved in

- a) Participating organizations - *who* participates
- b) Individual actors/responsibilities - *who and what* are main steps

A35) HOW it is currently supported

- a) Mechanisms - *how* is the process supported (equipment,...)
- b) Measures - *how* the process behaves via statistics

How to discover business processes

(Readings: pp. 129-132, Sharp, *Workflow modeling*, 2009)

A36) Identify the nouns that sit over the process

A37) Use <https://www.draw.io> (miscellaneous toolkit).

A38) Do not think too hard, you are doing discovery and not analysis

A39) Take each selected noun and ask the group to identify activities by thinking of which verbs go with it. Incrementally new discovered activities are added to the collection

A40) Clean up the activity names so they use an action verb and one or more nouns:

e.g. Designing -> design advertise;

Writing -> write editorial item;

Billing -> issue invoice

A41) Generalize any that refer to specific actors or technologies unless those references are key to understand the activity

A42) Eliminate duplicates, use the noun-is-verb-ed form to check the names, remind people the difference between result and objective

Link the Activities and Determine Business Processes

A43) The purpose is to uncover a set of related business processes by linking the activities into "result-trigger" chains, analyzing the linkages and determining business process boundaries

A44) Rules: a cluster of activities with 1:1 links generally is a well-formed business process, whereas 1:M and M:1 connections are not coordinated within the same process

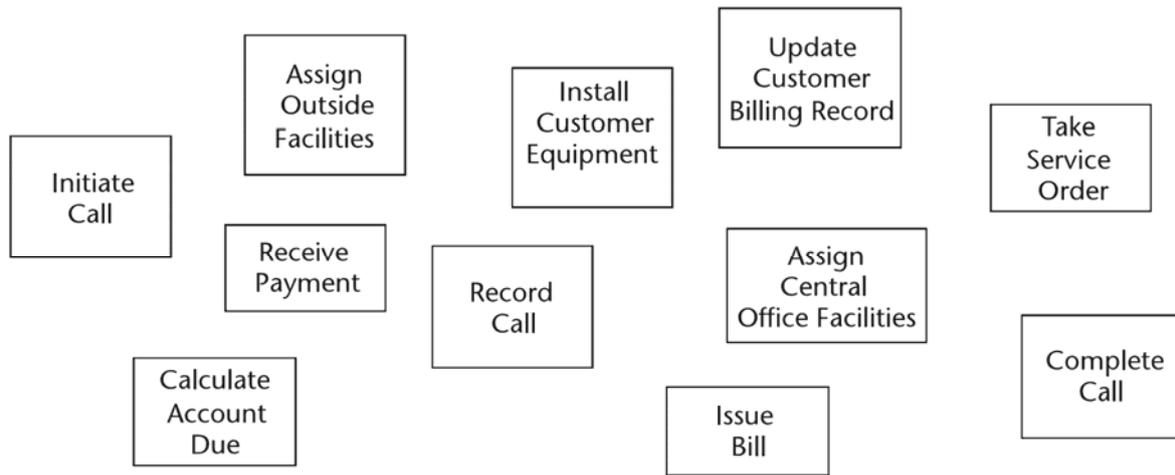
A45) The group places, on long sheets of plotter pages, the activities in sequence. Simply ask to identify cases when an activity is generally preceded or followed by another activity

A46) This sequencing makes missed activities more evident.

A47) Activities can be made of a long chain, but also of some parallel streams. Sometimes M:M linkages are also possible. Focus on 'happy path' (do not worry about looping or instances 1:0).

A48) Identify the business process boundaries and name the business processes.

Example: a Brainstorm Diagram to discover real processes in a Telephone Company



Partial results from activity identification.