

University of Pisa

MSc in Computer Engineering

Systems for Strategic Management and Support

LECTURE 8

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

Mario G.C.A. Cimino

Department of Information Engineering

I) DISCOVER BUSINESS PROCESSES: INTERRUPTION PATTERN

S173 - A chain of activities

[1:1]...[1:1] [M:1] [1:1]...[1:1] [1:M] [1:1]...[1:1]
(process instances) (shared process) (process instances)
sounds like three distinct processes

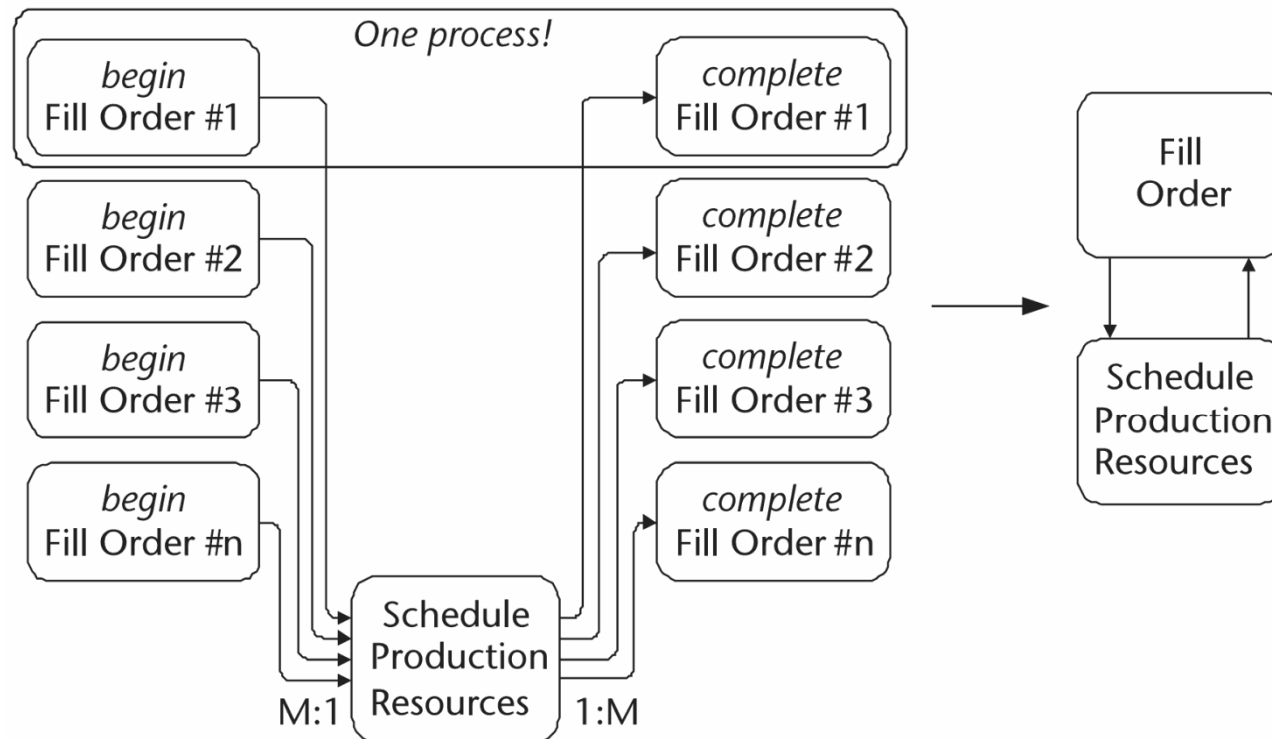
S174 - But they might be only **two processes**: the initial chain is the front end of a process, and the final chain is the back-end of the same process, and they were temporarily interrupted by another process.

S175 - The reverse situation

[1:1]...[1:1] [1:M] [1:1]...[1:1] [M:1] [1:1]...[1:1]
(process instance) (parallel splits) (process instance)
a chain of activities splits into M parallel activities that eventually rejoin and continue with the original triggering even.
It is all **one process**.

I) DISCOVER BUSINESS PROCESSES: INTERRUPTION PATTERN

S176 - Example of the first type, from a marine bulk terminal



A process "interrupted" by another process that provides a shared service.

- Multiple ship-loading orders flow into a separate process assigning and scheduling resources, after which the process instances start up again

I) DISCOVER BUSINESS PROCESSES: INTERRUPTION PATTERN

- S177 - Example of the second type: a process doing **experience-point (XP)** research. XP is a unit of measurement used in role-playing games, e.g., championship football game.
- S178 - At the front-end of the process is interview and survey design, then multiple (1:M) field workers collect survey data, which all upload (M:1), and the process continues with data crunching and report preparation. Hence, the original '1' (the event) carries on.
- S179 - Sometimes batching (M:1) is introduced to make things efficient, but is not an inherently part of the process. Focus on a **single instance** and ignore batching unless it is fundamental to the process
- Remember the Telco example, the key was to focus on the path taken by a single order, from triggering event through final result, instead of considering batched internal services.

I) DISCOVER BUSINESS PROCESSES:

S180 - Naming the Business Processes: a list of mushy verbs you should avoid

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

(REMEMBER JUST
A FEW OF THEM FOR
THE EXAM)

S181 - Use a top-down approach only when you are dealing with conceptual thinkers which may be frustrated by details.

S182 - But try to ask about legitimate activities that are smaller than a complete bp, so as to keep the bottom-up approach.

I) DISCOVER BUSINESS PROCESSES:

- S183 - Up to now we have named a set of related processes
- S184 - Now we choose the first process to be considered
- S185 - Often, the team receives some directive to match a business process
- S186 - A more formal approach is the following:
 - S187 - a) Identify the Critical Success Factors (CSFs) of the Organization, i.e., things that must go exceptionally well to meet the business objectives
 - S188 - "Completion of the XYZ project on time and on budget" → NO.
It is an objective. A related CSF could be:
"Maintain an exceptionally high level of client involvement in requirement definition" → OK, less specificity.
- S189 - It is useful to limit the number of CSFs to five.

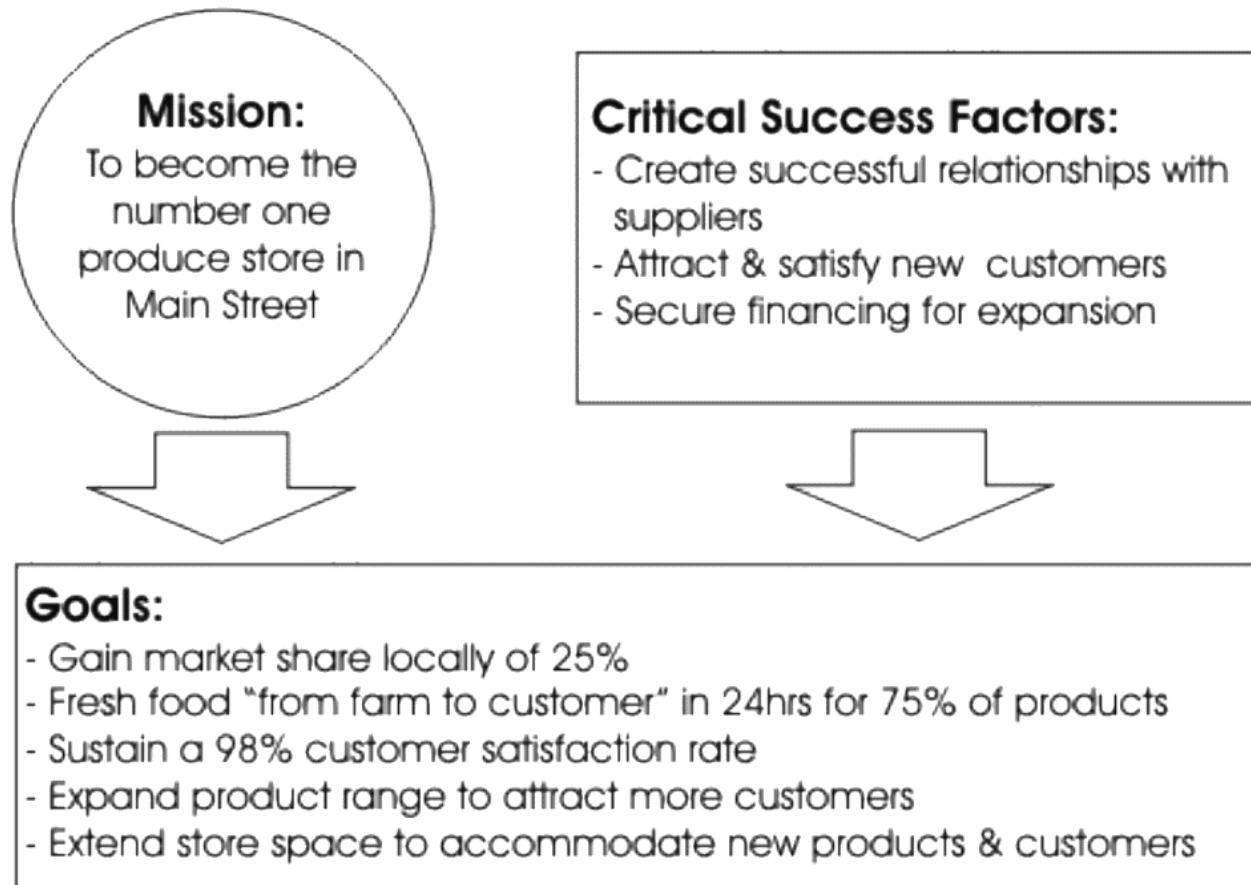
I) DISCOVER BUSINESS PROCESSES:

- S190 - b) Build a matrix processes versus CSFs, and for each process determine the impact (from 1 - low - to 5 - high -) that the process has on CSF
- S191 - c) Assess the ‘brokenness’ of each process (from 1 - good shape - to 5 - mess -)
- S192 - d) Build a numerical ranking of each process to find where to focus
- S193 - The best is to find a broken process with high impact.
- Example of CSFs for a produce store ‘Farm Fresh Produce’:

Objective	Candidate Critical Success Factors
Gain market share locally of 25%	Increase competitiveness versus other local stores Attract new customers
Achieve fresh supplies of “farm to customer” in 24 hours for 75% of products	Sustain successful relationships with local suppliers
Sustain a customer satisfaction rate of 98%	Retain staff and keep up customer-focused training
Expand product range to attract more customers	Source new products locally
Extend store space to accommodate new products and customers	Secure financing for expansion Manage building work and any disruption to the business

I) DISCOVER BUSINESS PROCESSES:

Critical Success Factors, Missions & Goals for "Farm Fresh Produce"



II) ESTABLISH PROCESS SCOPE AND CONTENTS:

S194 Establish scope and contents of the process (iterative):

S195 - II-1) 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?

S196 - II-2) WHO is involved in

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

S197 - II-3) HOW it is currently supported

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

II) ESTABLISH PROCESS SCOPE AND CONTENTS:

- S198 - II-1-a) Identify Triggering Events
- S199 - A BP can be triggered by one or more of these types of events:
Action, Temporal or Condition events.
- S200 - e.g.: the process ‘determine inventory level’ could be triggered by:
 - a request from the bank (action)
 - the annual inventory cycle being reached (temporal)
 - a discrepancy being detected by a monitoring activity (conditional)
- S201 - Focus on the essence, i.e, *what* the trigger was.
 - e.g.: say ‘customer complaint is registered’ and not ‘complaint is registered by the customer service representative using CRM system’ (such details lead to use cases and not to processes).
- S202 - Action events are common, but do not fail to identify the real temporal or conditional event.
 - Example:...

II) ESTABLISH PROCESS SCOPE AND CONTENTS:

- ... Assume that the *Resolve Service Issue* process began when a ‘trouble ticket was completed’
 - Hence, all improvements efforts are focused on activities downstream of that event
 - The problem is that the ticket is not the essence of the event, because it is connected to procedures. The real event is much earlier.
- S203 - By asking ‘what had to happen before that?’
- It can be found a chain of events...

II) ESTABLISH PROCESS SCOPE AND CONTENTS:

- Before the trouble ticket was completed, the tech support rep (“the tech”) had to record a description of the problem.
- Before that, the tech had to determine that they didn’t have an immediate solution for the customers.
- Before that, the tech had to get an understanding of the problem and attempt a solution.
- Before that, the tech had to accept the phone call from the customers.
- Before that, the call distribution system had to route the call to the next available support rep.
- Before that, the customers had to phone the tech support line and engage in a dialog with the call handling system.
- Before that, the customers had to find the tech support number to call, which was not easy.
- Before that, and this was ultimately the heart of the problem, the customers realized how hopeless it would be to call tech support, so they tried to fix the problem themselves or with the assistance of well-meaning friends, which typically made the problem worse.
- And finally, before that, the customers realized they had a problem, which in fact was the real triggering event.

II) ESTABLISH PROCESS SCOPE AND CONTENTS:

- Before the customer realized he had a problem, there were other events, e.g., the purchase of the offending computer.
- However, they are not part of this specific chain of events.
- S204 - **Protocol events** are action events but are not triggering events. They are only required because of the process's protocol.
- E.g. a customer has to submit a receipt for a payment to a repairperson to obtain reimbursement from the manufacturer.

PILOT CASE STUDY: THE AGENCY

Background:

“The Agency,” as we’ll call them, is mandated by the government to ensure workplace health and safety for the workers and employers within their jurisdiction. They accomplish this through education, consultation, monitoring, inspection, and enforcement. In your area, the equivalent organization might have phrases such as “workplace safety,” “occupational safety and health,” “workers’ compensation,” or “labor regulation” in its name.

The agency finds itself under ever increasing pressure. Workers, employers, the public, the media, and the government all have higher than ever expectations for the safety of workers. They also have high expectations for the competitiveness of employers in an age where work (and employment) can move freely to lower-cost jurisdictions. On top of that, the prevailing laws and regulations are much more complex than they used to be, and cooperation with other agencies and organizations is expected.

The agency has determined that in order to improve stakeholder perceptions, ensure its survival, and, most of all, meet its mandate to improve workplace safety, health, and economic well-being, it must:

- Provide the very best quality of service to its customers, the workers, and employers of the region. In particular, they must be perceived as being less bureaucratic and more appropriate and sensitive—their actions must be predictable, justified, rational, and both cost- and time-effective.
- Improve workplace safety, not just anecdotally, but be able to quantitatively demonstrate their achievements.
- Improve the work environment for the health and safety professionals they employ by eliminating needless frustration.
- Prove that they are “best of breed” when compared to other public and private agencies in terms of cost-effectiveness and customer service.
- Earn the support of the government in enacting enabling legislation by demonstrating their effectiveness and needs.

Toward these ends, the agency has initiated a comprehensive program of fundamental process redesign.