

University of Pisa

MSc in Computer Engineering

Systems for Strategic Management and Support

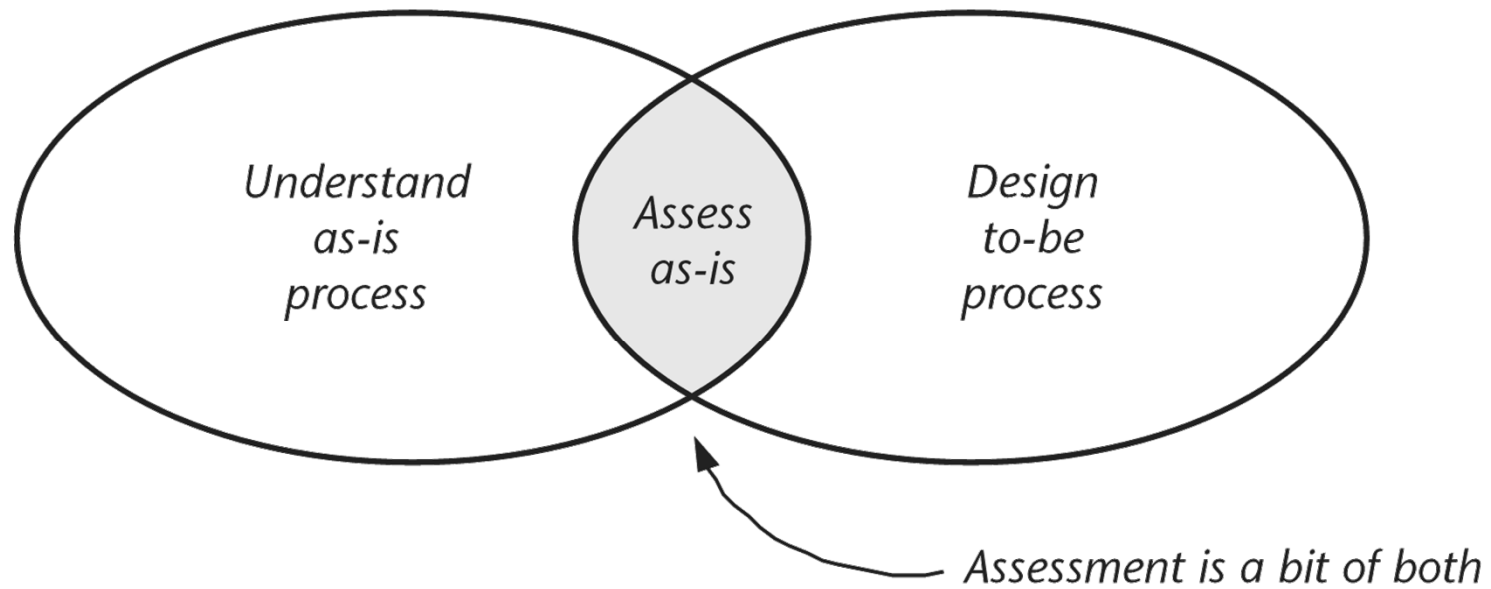
LECTURE 20

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

Mario G.C.A. Cimino

Department of Information Engineering

IV) TO-BE PROCESS ASSESSMENT



Final assessment is part as-is, part to-be.

- S530 • With final as-is assessment we are taking a step into design of the to-be process. They are inseparable.
- S531 • So far, we discourage people from thinking about solutions.
- S532 • So far, record improvements suggestions as they arise

IV) TO-BE PROCESS ASSESSMENT

- S533 ● You cannot be sure of the root causes of the problems and of their solutions just after the as-is workflow modeling takes place.
- S534 ● Example. Your initial assessment for a permit application determined that the cycle time was far too long. After as-is-modeling, your team feels that an IT solution based on a BPMS will address the problem, by expediting the movement of the permit through the process.
- S535 ● However, an enabler-based assessment might determine that the real problems are inappropriate staff performance metrics and narrow job definitions (too many people each looking at too small a piece of puzzle)
- S536 ● Often IT solutions do not make the desired improvement because they do not look at the whole process, do not address the most important issues, do not address all of the enablers.
- S537 ● Goals: *conduct final as-is assessment* → to determine the root cause of unsatisfactory performance in the process. *Determine to-be process characteristics / workflow* → suggest ideas for consideration

IV) TO-BE PROCESS ASSESSMENT

Conduct final as-is process assessment

a) Confirm initial stakeholder assessment and process goals

- S538 • Ask: Would the as-is process assessment and the to-be process goals be different for some stakeholder, on the basis of what they learned so far?

b) Capture first impressions of process strengths and weaknesses

- S539 • At this point, participants will probably have some string ideas about the process. Brainstorms for first impressions: significant problems, features to keep, possible improvements. Do not consider minor details, by allowing only 20'-30' of session time.

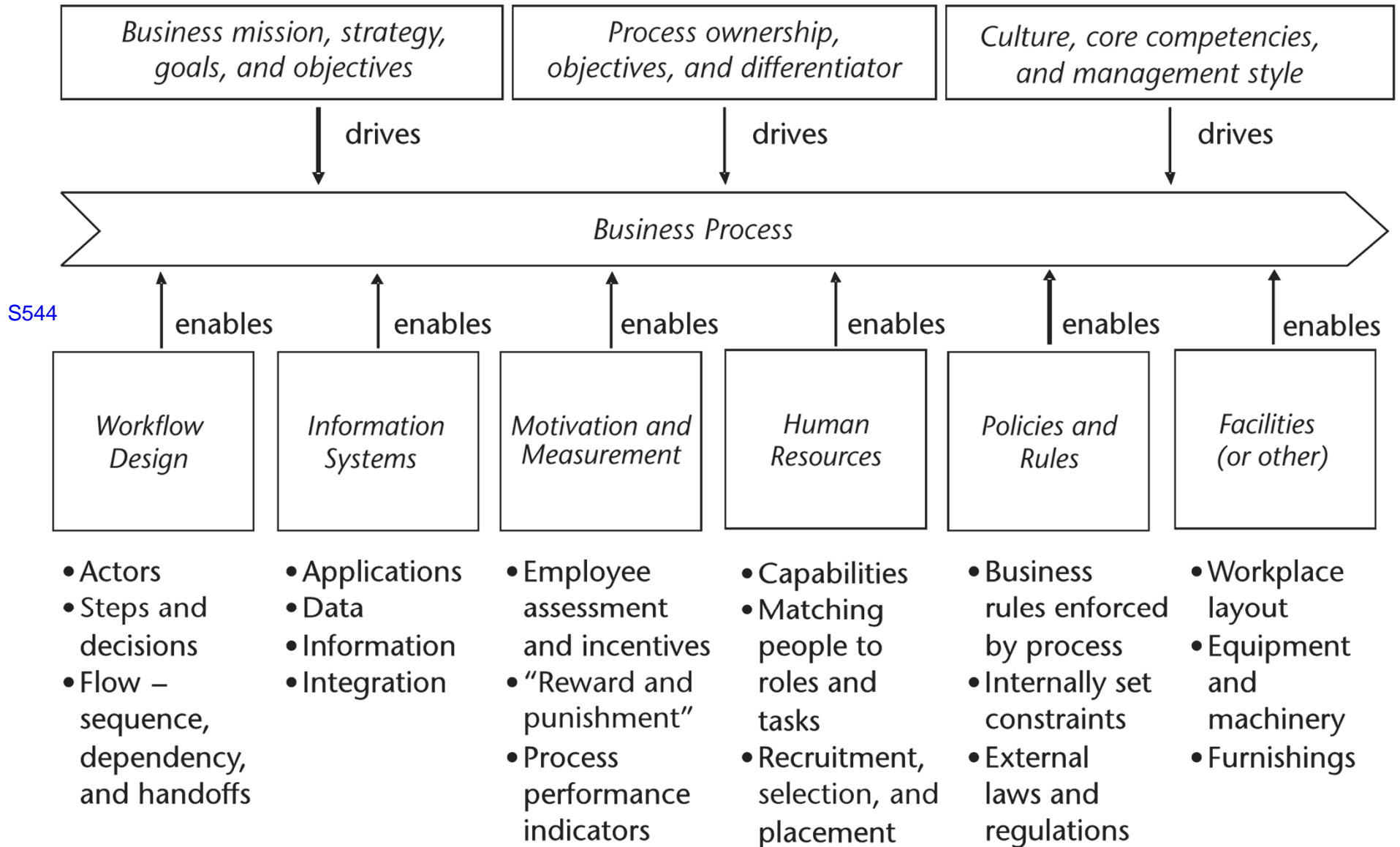
c) Identify leverage points

- S540 • A leverage point is a specific part of the process having a disproportionate impact on overall performance. It is likely to be the root cause of significant problems. E.g. a particular step in the absence of a needed enabler within a specific process case.

IV) TO-BE PROCESS ASSESSMENT

- S541 • A leverage point can be also considered in terms of the famous 80/20 Pareto rule: 80% of the distributions usually goes to 20% of the observations. E.g. 80% of the wealth is held by the richest 20% of the household, 80% of the workers are employed by the largest 20% of companies, 80% of your problem could be caused by 20% of your process steps or cases.
d) Assess by each enabler, generating process improvements ideas
- S542 • Workflow design. Look for design flaws: many actors/handoofs, non-value added steps, excess serialization, under-resourced step, process yo-yo, undocumented process, undefined roles, and son on
- S543 • Information systems. Look at unavailable information, lack of shared data, rekeying (duplicate entry), inconsistent data structures, formats or semantics, missing functionality, manual activities that can be automated, non-usable interfaces, lack of support for workflow, weak automation replicating paper-based process, outdated IT solutions.

IV) TO-BE PROCESS ASSESSMENT



A process in context with constraints and enablers.

IV) TO-BE PROCESS ASSESSMENT

- S545 • Motivation and measurement. Distortion in behavior are often caused by local measures of piecework measures, rather than more sophisticated metrics that include all relevant customer outcomes or process results. A recent article in the *New York Times*:

I recently took care of a 50-year-old man who had been admitted to the hospital short of breath. During his month long stay he was seen by a hematologist, an endocrinologist, a kidney specialist, a podiatrist, two cardiologists, a cardiac electrophysiologist, an infectious-diseases specialist, a pulmonologist, an ear-nose-throat specialist, a urologist, a gastroenterologist, a neurologist, a nutritionist, a general surgeon, a thoracic surgeon and a pain specialist. He underwent 12 procedures, including cardiac catherization, a pacemaker implant and a bone-marrow biopsy (to work-up chronic anemia).

This man's case, in which expert consultations sprouted with little rhyme, reason or coordination, reinforced a lesson I have learned many times since entering practice: In our health care system, where doctors are paid piecework for their services, if you have a slew of physicians and a willing patient, almost any sort of terrible excess can occur. Though accurate data is lacking, the overuse of services in health care probably cost hundreds of billions of dollars last year, out of the more than \$2 trillion that Americans spent on health.

IV) *TO-BE* PROCESS ASSESSMENT

S546

- Motivation and measurement (2). Start from the perspective of customers, and then of the organizations, owners, department and functions involved, individual actors. Look at desired outcomes and related measures able to emphasize that outcomes. Are there appropriate measures for the contribution of each actor? Look at misalignment between how the customer would measure the process and how the organization measures the process.

S547

- Human resources. Encompasses organization structure, job definition, recruiting, skills, and training. Key point: ‘are the right people, with the right skills, in the right jobs, performing the right tasks?’ Example: in one (failed) reengineering project, doctors had been provided with word processing software to update their own records without medical data entry staff for dictation or handwritten draft correction. It was a disaster. Another common issue is recruiting the wrong people because of the focus on particular experiences. A good summary is “hire for attitude, train for skills”.

IV) TO-BE PROCESS ASSESSMENT

- S548 • Policies and rules. They can be caught when inspecting the decision points of the workflow. Look for any constraint or requirement imposed by the business and impacting the conduct of the BP. Look also at rules that were thought to be in place that really are not.
- S549 • Facilities. Look for cases where the workplace and equipment interfere with the process. Nowadays workflow modeling is used in the design of new facilities, as it always has been in industrial environment. E.g. a hospital environment, where the layout of nursing stations and labs matches patient flow, where sample storage, preparation and testing workstations in a laboratory are arranged to match sample flow. Ask: does distance between task-linked people introduce delays? Are there meeting facilities if work is collaborative in nature? Does the physical environment make the job more difficult or unpleasant?
- S550 • Other factors. E.g., *documents* as an enabler. Ask: *what* document, *how* they are transmitted and received?

IV) TO-BE PROCESS ASSESSMENT

S551 e) Assess individual steps (optional)

- Only for critical or complicated processes. Ask step by step:
 - Is this step necessary? (REMEMBER SOME OF THEM)
 - Does it yield a useful result?
 - Would a “reasonable” customer pay?
 - Does the most appropriate performer handle it?
 - Do handoffs to or from the step introduce error, expense, or delay?
 - Is the step triggered in the most appropriate way?
 - Is this the step occurring at the best point in the sequence?
 - Is this the step implemented or supported in the best way?
 - Is all the necessary information available to the performer?

- S552 • Another approach is to see a process as a *value chain* where each step should add value to the preceding step. Hence, what is important about eachs step is whether it is adding value or not.

IV) TO-BE PROCESS ASSESSMENT

f) Consolidate improvement ideas

- S553 • Organize the list of process improvements ideas, that were generated along the assessment, into two lists: ideas for improving the process and process characteristics to preserve.
- S554 • Highlight “quick win”, i.e., quick and cheap (cost effective) but significant improvement that does not have an opportunity cost and does not damage things in the long run.

g) Decide on approach for the future of the process

- S555 • Drop/abandon: the benefit will never justify the cost.
- S556 • Outsource: to have a supplier carrying out the process. This is usually done for cleaning, catering, billing, receivables, help desk, network operations, PC support, and so on.
- S557 • Leave as is: the process is fine, issues are elsewhere.
- S558 • Improve: basic structure is good, specific improvements possible
- S559 • Redesign: the process should be fully redesigned

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

Common problems in process redesign

- S560 • Tunnel vision: focusing exclusively on workflow and IT. In contrast, enablers provide a holistic view of the process.
- S561 • Automating the as-is instead of rethinking it.
- S562 • Unanticipated consequences: implementing “improvements” without a clear idea of consequences.

Main Goals

- S563 • Describe the “specifications” for the new process, i.e., its characteristics in terms of each of the six enablers.
- S564 • Develop swimlane diagrams at two levels of detail (handoff and service) representing the process workflow supporting the desired characteristics of the process.

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

Core activities

- S565 • Generate process improvement ideas: creativity is not a random activity, there are techniques for creative thinking or *lateral thinking*.
- S566 • Assess process improvement ideas: look at the idea versus all six enablers (“in context”).
- S567 • Develop the to-be workflow, one level of detail at a time.

Some Best practices to look at the idea versus all six enablers

- S568 • Workflow design: establish more little process each tailored for a particular type of transaction, instead of one complex process; eliminate or postpone approval or information steps, by considering by default the “approved” status; support via IT the parallel access to data, in contrast with serial and paper-based access.

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

- S569** • Information Systems: use bar coding or self-identifying tags to eliminate data entry; use shared databases or data transformation middleware to eliminate rekeying data error and to track process history; use discussion forums to have feedback from users; use business process management systems (BPMS) to implement your end-to-end process, and business activity monitoring (BAM) to monitor individual transactions as they move through the process

- S570** • Motivations and measurement: focusing on productivity and providing “daily performance reports on every operation, worker, and department” a company inadvertently sets up a cycle that ultimately does little for productivity because many other variables (related to customer-product quality, order accuracy, and so on) are negatively impacted. Substitute productivity with efficiency.

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

Here is a favorite example—a telephone company (two, actually) measured customer service reps on short phone calls and backed it up with negative consequences for longer phone calls (a flashing red light above the “offending” CSR—you can’t make this stuff up). Naturally, they got what you would expect—short phone calls. Of course, they came at the cost of the CSR moving on without dealing with the customer’s problem, and sometimes even disconnecting the call as the time limit approaches, but the calls were indeed short. This is a perfect example of “perverse incentives”—task-based measures with either incentives (reward) or disincentives (punishment) attached that encourage behavior that could only be described as perverse. At both of these telephone companies, expensive programs aimed at having CSRs also perform sales functions failed completely, because they brought yesterday’s measures into tomorrow’s process.

On the other hand, measures that focus instead on improving the quality of products or customer service, such as “recurring problems detected” or “problems solved on the first call” or “defect-free product introduction” yield quite different results. We recently read about a company that reversed defections to its largest competitor by putting entirely different objectives in place for their CSRs. Rather than encouraging them to end the call as quickly as possible, the company essentially said, “stay on the line as long as it takes, just *keep the customer*.” An objection we’ve heard is that “we don’t have the resources to provide each customer with that much time.” Probably true, but in many fields (including customer service) it’s been observed that it’s more cost-effective to get it right the first time (i.e., on the first call) than to invest in scrap and rework.

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

- S571** • Human Resources. To recombine tasks into fewer job functions is especially important when customer is aware of the handoff. To expand the role of the front-line customer contact personnel (e.g. sales activities + customer service), by adding supporting tools and handling properly motivation and measurement. Back office specialist can be trained and moved to customer contact positions for faster and personalized services. Split a job when scarce resources spend a lot of time performink work feasible by support or jurion staff. E.g. in a lab, sample preparation and analysis is assigned to support staff and junior scientists, whereas senior scientists do the interpretation.
- S572** • Policies and Rules. Eliminate approval steps by providing regular information or audit reports to management. Eliminate the delay in review by allowing the process to proceed in the meanwhile and to stop before the end of the transaction, if a high percentage of cases routinely pass the review anyway.

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

- S573 • Policies and Rules (2). Eliminate delays due to credit history checks and proof of financial responsibility where a valid credit card could cover financial loss risks. Reduce the volume of policies replacing them with a simpler statement of principles; this requires: defined authority, accountability for decisions, with consequences, clear policies for front-line decision making, tools and training, a backup mechanism in difficult cases (safety net).

Brainstorming additional suggestions (optional)

- S574 • First brainstorm for any improvement, tactic, or process characteristic that comes to mind.
- S575 • Then, brainstorm on improvements for each of the enablers, one at time.

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

Apply the Challenge Process

- S576 • Take each step (or linked series of steps) of your level 1 or level 2 swimlane diagram, and *overstate* it as hard and fast rules, by adding words like “only”, “must”, “never”. This helps people to identify the underlying absurdity and alternatives.
- S577 • Example:
The customer initiates a claim by telephone
becomes
Only a customer can initiate a claim
Claims must be initiated by telephone
- S578 • Ask for each step: “does this step”... yield useful result? ... has to be done at all? ... has to be done by the actor currently doing it? ...has to be done in the sequence it is being done in? ... has to be done where it is being done? ... has to be done in this manner?

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

Assess ideas in context and select

- S579 • Tape up the “idea list” generated so far
- S580 • Set aside any idea not feasible, e.g. illegal, poor fit with skills and culture, resource-intensive, non contributing the process goal.
- S581 • Build an assessment matrix: a row for each idea and a column for each enabler, and an additional column for notes/conclusion.
- S582 • Select an idea for assessment and record it in a row
 - For each enabler ask “what will have to be changed in this enabler to make the idea working?”.

S583

Suggestion	Workflow Design	Info. Tech.	Motivation & Measurement	Human Resources	Policies & Rules	Facilities (or other)	Feasibility & Notes
Customer Service Reps (CSRs) take on sales responsibilities.	Will the CSR or a “closer” set up the new service? Who follows up with interested Customers not ready to commit?	System to present real-time view of Customer's total business, and recommend alternatives	CSRs paid more for additional responsibilities? Current measure is “call time” – must change. Commission? What impact on commissions for current sales force?	Sales training? Displacement of current sales reps?	What will CSR's authority be for discounts, etc.?	CSRs may need more desk space for product catalogs that aren't online.	What will Customer reaction be?

Assessing potential process characteristics by enabler.

(REMEMBER THE LAYOUT ONLY)

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

- S584 • Decide whether the idea still has merit. This may require research, though, to assess costs and other impacts versus benefits. Or you might decide to revise/eliminate it.
- S585 • Continue with the next improvement idea.
- S586 • Once all plausible ideas have been assessed, select the rows that will become the “characteristics” or specification for the new process.

- S587 • Document each selected idea more carefully: name, description, issues addressed, anticipated outcomes/benefits, enablers.
- S588 • This format is a high-level, easy-to-understand “process requirements document”.

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

Develop ideal to-be workflow

- S589 • Before starting a swimlane diagram, express the essence of the process, the *what* and *when*. Example, the Issue Business License process, which includes an inspection of the business premises.
- (WITHOUT THE EXAMPLE)
- The inspector gets to the next inspection location.
 - Inspector conducts inspection (these first two are repeated throughout the day).
 - Inspector returns to field office.
 - Inspector telephones head office (HO) technician.
 - Inspector reads each inspection report while HO technician transcribes information onto HO transcription report.
 - HO transcription reports are batched, and three times per week they go to data entry.
 - Data entry enters each HO transcription report into a locally hosted inspection system.
 - The inspection system prints a three-part report on an impact printer detailing each inspection.

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

- An operator separates the three copies (“bursting and decollating,” for you former machine room operators).
- Pink copies are attached to the corresponding original HO transcription report.
- All of the reports for an inspector are collected and mailed back to the correct field office.
- The inspector matches their original inspection report with the printout from the inspection system.
- If there’s an error, they check the HO transcription report to determine if the error occurred during transcription or data entry.
- And so on. (We won’t get into the error-correction process, but trust us, it’s a beauty.)

IV) TO-BE PROCESS ASSESSMENT: characteristics and workflow

At a session to identify improvements to the process, suggestions included:

- The inspectors could be equipped with mobile phones so they could phone in each inspection report immediately.
- Inspectors could fax their reports so HO technicians could transcribe them without tying up the phone or dealing with miscommunications.
- The batch update job could be run daily instead of three times a week.
- The reports could be printed on laser printers (three times) to eliminate the separation step.

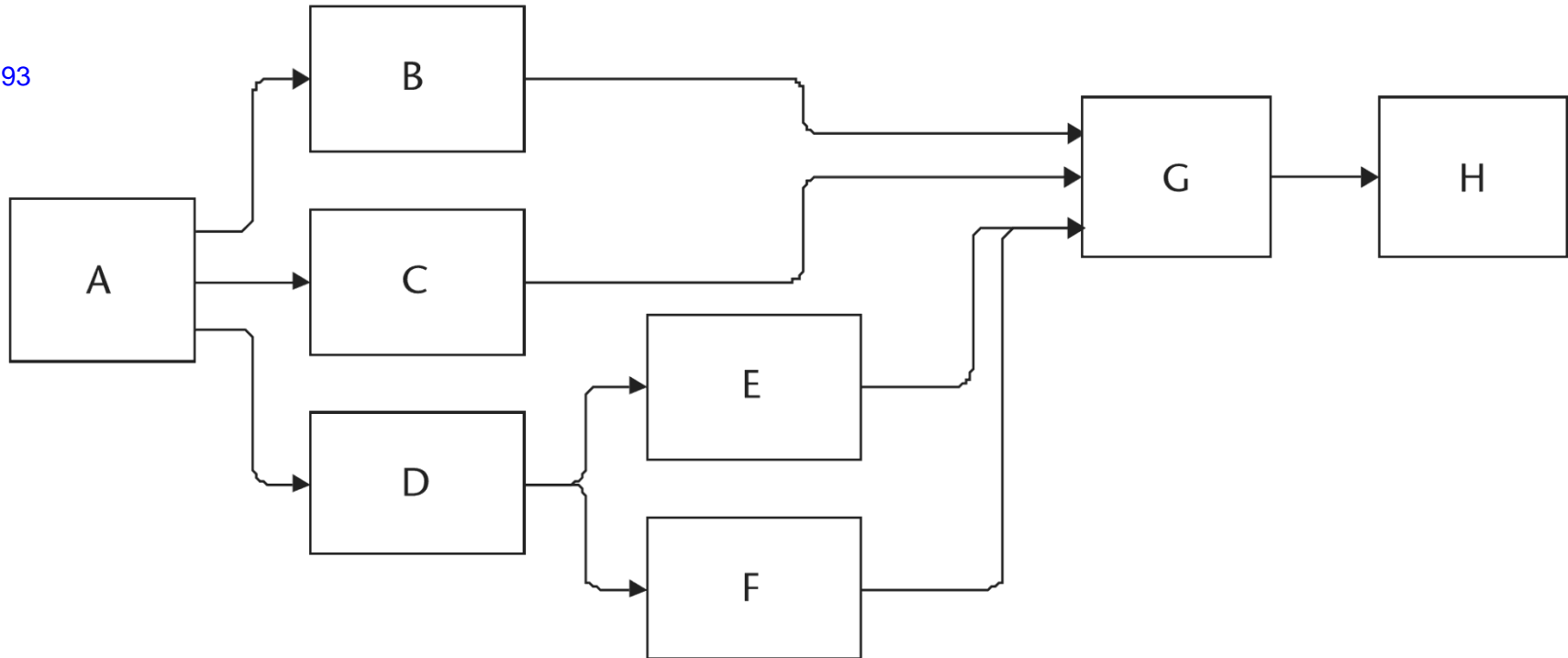
S590 • Identify the essential steps, using the as-is models and the process characteristic as a guide. Most of them are milestones or significant state changes.

S591 • Identify the dependency among essential steps: which ones must happen in sequence, and which in parallel

S592 • Depict the dependencies graphically (like a project plan).

IV) *TO-BE* PROCESS ASSESSMENT: characteristics and workflow

S593



The dependency among essential steps is a template for the ideal.

Develop to-be workflow

- S594 • Using the characteristics matrix and your ideal workflow as guides, propose a handoff level first, then service-level.
- S595 • Task-level is to be made after agreement, on separate documents.