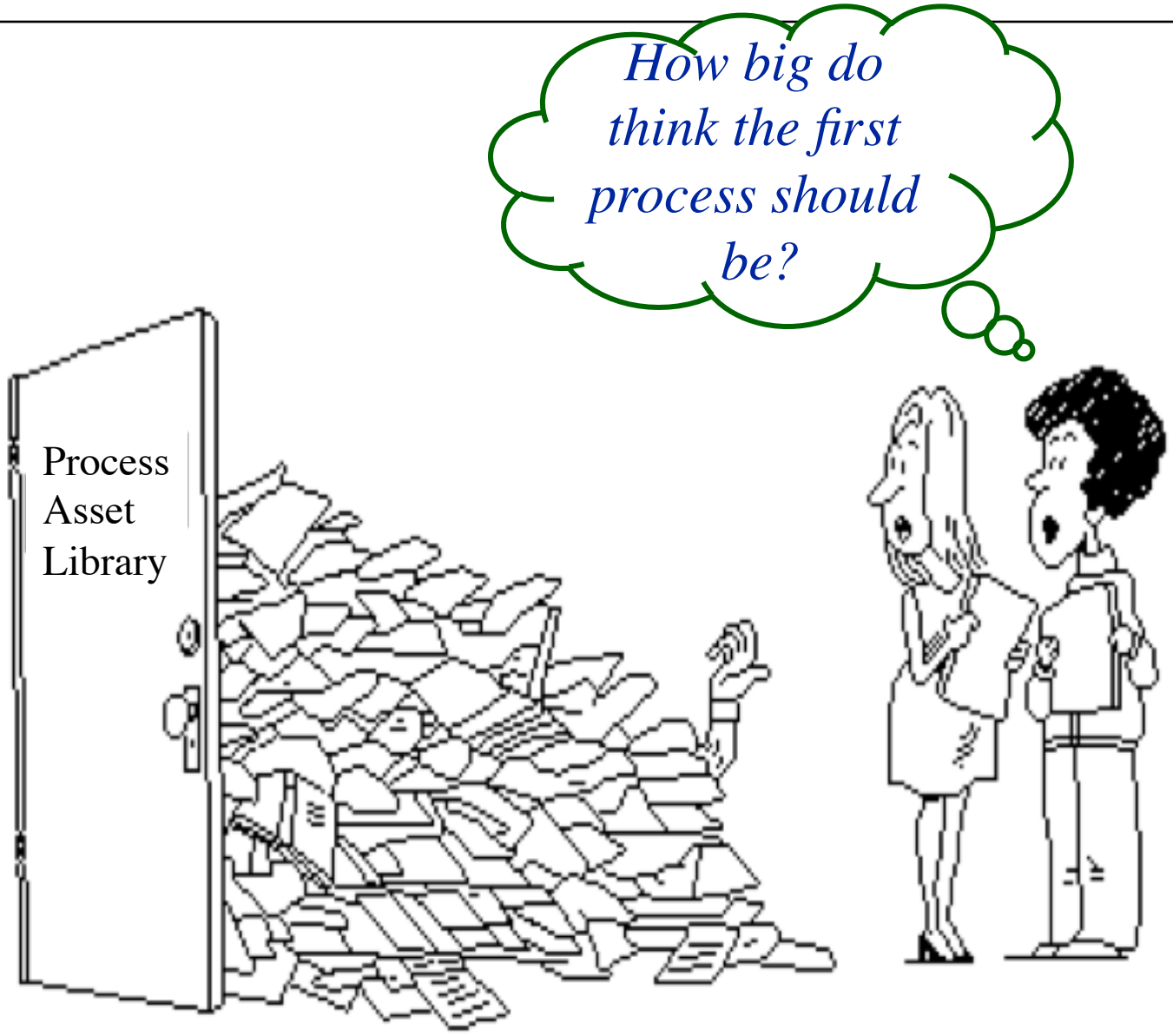
THE PROCESS GROUP

Making Processes Really Simple and Effective Using Lessons Learned from Surgical Checklists

The Process Group
www.processgroup.com
neil@processgroup.com

Neil Potter



Agenda

1. Background
2. Matching Process Complexity with Need
3. Guidelines for Creating Checklists
4. Example Requirements Management (REQM) Process
5. A Checklist for Checklists
6. Summary

References

- http://www.processgroup.com/monthlytidbits.html#tidbit8
- http://www.processgroup.com/monthlytidbits.html#tidbit11

Background

- World Health Organization Goal: Improve surgical procedures worldwide*.
- A medical checklist was created based on aviation checklists.

- Premise: a simple checklist can ensure that critical steps have not been overlooked, either due to haste, forgetfulness or inexperience.
- Measurements were collected from surgeries performed around the world, before and after the checklist. Results:
  - Major complications down by 36%
  - Infections down by ~50%
  - Patients returned to surgery because of problems down by 25%
  - Harm suffered from surgery (over 4,000 patients) down by 150
  - 27 fewer deaths (47% drop) caused from surgical complications

*Atul Gawande, associate professor of surgery at Harvard Medical School
Checklist Manifesto: How to Get Things Right

Surgical Safety Checklist

World Health Organization | Patient Safety
A World Alliance for Safer Health Care

Before induction of anaesthesia

(with at least nurse and anaesthetist)

Has the patient confirmed his/her identity, site, procedure, and consent?
- ☐ Yes

Is the site marked?
- ☐ Yes
- ☐ Not applicable

Is the anaesthesia machine and medication check complete?
- ☐ Yes

Is the pulse oximeter on the patient and functioning?
- ☐ Yes

Does the patient have a:

Known allergy?
- ☐ No
- ☐ Yes

Difficult airway or aspiration risk?
- ☐ No
- ☐ Yes, and equipment/assistance available

Risk of >500ml blood loss (7ml/kg in children)?
- ☐ No
- ☐ Yes, and two IVs/central access and fluids planned

Before skin incision

(with nurse, anaesthetist and surgeon)

- ☐ **Confirm all team members have introduced themselves by name and role.**
- ☐ **Confirm the patient's name, procedure, and where the incision will be made.**

Has antibiotic prophylaxis been given within the last 60 minutes?
- ☐ Yes
- ☐ Not applicable

Anticipated Critical Events

To Surgeon:
- ☐ What are the critical or non-routine steps?
- ☐ How long will the case take?
- ☐ What is the anticipated blood loss?

To Anaesthetist:
- ☐ Are there any patient-specific concerns?

To Nursing Team:
- ☐ Has sterility (including indicator results) been confirmed?
- ☐ Are there equipment issues or any concerns?

Is essential imaging displayed?
- ☐ Yes
- ☐ Not applicable

Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

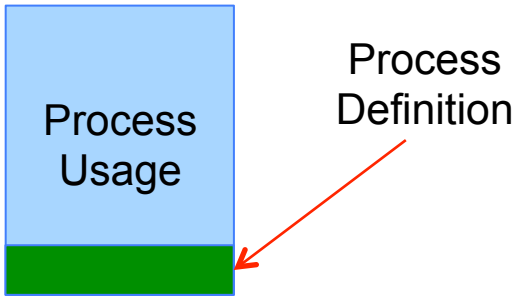
Nurse Verbally Confirms:
- ☐ The name of the procedure
- ☐ Completion of instrument, sponge and needle counts
- ☐ Specimen labelling (read specimen labels aloud, including patient name)
- ☐ Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- ☐ What are the key concerns for recovery and management of this patient?

Matching Process Complexity with Need

- **The time needed to write a process is usually a lot less than the time spent using it. E.g.,**
  - A project planning process of 1-2 pages may take a 2 days to develop and then be used numerous times.
  - A spreadsheet for risk management may take ½ day to develop and manage numerous risks over many years.
  - The benefit of using it outweighs the cost of developing it.

- **Places where a small process might be adequate:**
  - SVC: REQM, WP, WMC, CM, MA, OPF, OPD, OT.
  - DEV: OPF, OPD, PI (small DEV projects), OT.
  - .... process includes all Generic Practices



Guidelines for Creating Checklists -1

- Two main styles of checklists:
  - "Do-Confirm" – verify critical steps
  - "Read-Do" - perform given specific situations
- Select pause points in work flow where the completion of critical steps can be verified.
- Condense the checklist onto one page and use single bullet point sentences.
- Checklist items are critical (high-risk) and are not covered elsewhere.
- Run the checklist verbally with the team to ensure that anyone that has an issue can speak up.
- Revise the checklist numerous times until it is able to quickly detect serious problems.

Read-Do

CM Process

1. List Configuration Items

   x, y, z

2. Establish File Naming Convention

   File-x<n>.docx

3. Establish Baseline File Structure

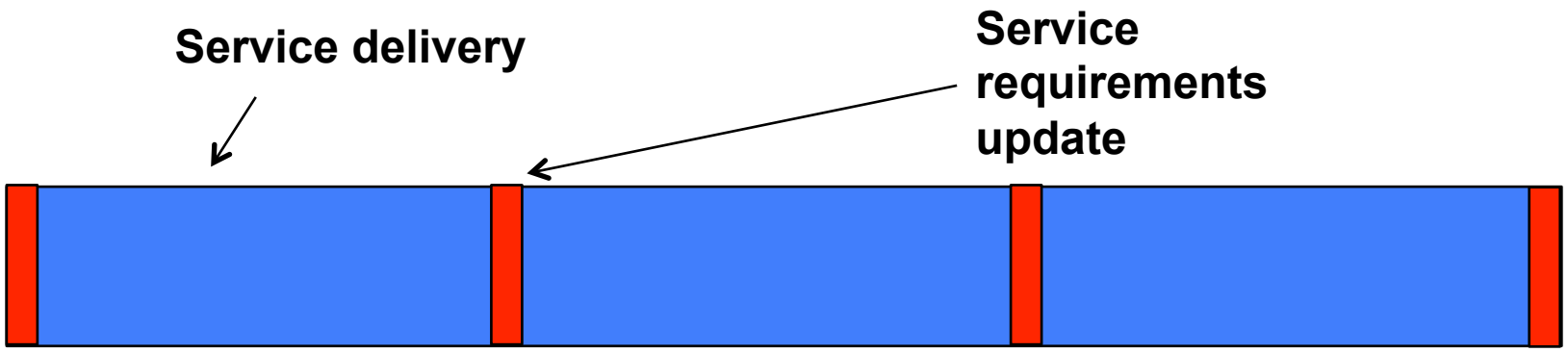
   ~~~~~~

4. ~~~~

   ~~~~~~

Guidelines for Creating Checklists -2

- **Move implementation details as help text or training.**
- **Treat the process as "day-to-day usage," not beginner.**
  - This is where the majority of time will be spent.
- **Example scenario:**
  - Service requirements don't change much (or at all) over time.
  - REQM is used 1 day per year to manage the change.



Example Requirements Management (REQM) Process – 1

Purpose: A checklist used to understand, confirm and manage changes to requirements.

Policy: All changes are managed using this checklist [gp2.1]

Do

- ❑ Plan the requirements definition/review event [gp2.2]:
  - Date: _____
  - Time / resources needed: (gp2.3) _____
  - Responsibility: [gp2.4] _____
  - Stakeholders [sp1.2, gp2.7]:
    - ❖ Role = Agree to services: <Name>. Commitment _____
    - ❖ Role = Provide expertise: <Name>. Commitment _____
    - ❖ Role = Team member 1: <Name>. Commitment _____
    - ❖ Role = Senior manager approval: [gp2.10] <Name>. Commitment _____

Example Requirements Management Process – 2

- Discuss new and changed requirements with stakeholders to clarify understanding: [sp1.1, 1.3, 1.5]
  - Review current requirements
  - Review proposed changes to requirements
  - Human resources needed to implement change: _____
  - New materials/consumables/computers needed to implement change:_____
  - Current commitments and deadlines impacted:_____
  - Added risks and mitigation actions: _____
  - Record stakeholder commitments next to name [sp1.2]
- Record major issues/actions
- Update traceability mapping [sp1.4]
  - Label requirement 1 thru N
  - List impacted deliverables and documents for each requirement
  - State test method (e.g., peer review, test case, pilot) for each requirement
- Save this document as service-roles-vN.doc on X drive with change history comments [gp2.6]

Example Requirements Management Process – 3

Check

- ❑ Training has been provided to perform the steps above? [gp2.5]
  - If not, training date / time / who _____
- ❑ All process steps above have been performed? [gp2.8]
  - Corrective actions needed/taken? _____
- ❑ Objective/independent check done [gp2.9]:
  - Auditor name: _____
  - Audit date: _____
  - Pass / fail?: _____
  - If fail, corrective actions needed: _____
- ❑ Senior management aware of this requirements event, results, issues? [gp2.10]
  - Comments: _____

THE PROCESS GROUP

A CHECKLIST FOR CHECKLISTS

Development → Drafting → Validation

Development

- ❑ Do you have clear, concise objectives for your checklist?

Is each item:

- ❑ A critical safety step and in great danger of being missed?
- ❑ Not adequately checked by other mechanisms?
- ❑ Actionable, with a specific response required for each item?
- ❑ Designed to be read aloud as a verbal check?
- ❑ One that can be affected by the use of a checklist?

Have you considered:

- ❑ Adding items that will improve communication among team members?
- ❑ Involving all members of the team in the checklist creation process?

Drafting

Does the Checklist:

- ❑ Utilize natural breaks in workflow (pause points)?
- ❑ Use simple sentence structure and basic language?
- ❑ Have a title that reflects its objectives?
- ❑ Have a simple, uncluttered, and logical format?
- ❑ Fit on one page?
- ❑ Minimize the use of color?

Is the font:

- ❑ Sans serif?
- ❑ Upper and lower case text?
- ❑ Large enough to be read easily?
- ❑ Dark on a light background?

- ❑ Are there fewer than 10 items per pause point?
- ❑ Is the date of creation (or revision) clearly marked?

Validation

Have you:

- ❑ Trialed the checklist with front line users (either in a real or simulated situation)?
- ❑ Modified the checklist in response to repeated trials?

Does the checklist:

- ❑ Fit the flow of work?
- ❑ Detect errors at a time when they can still be corrected?

- ❑ Can the checklist be completed in a reasonably brief period of time?
- ❑ Have you made plans for future review and revision of the checklist?

Source: www.projectcheck.org

Summary

- **Processes don't have to be voluminous to be "complete."**
- **A checklist is adequate for some Process Areas (and processes).**
- **Consider splitting processes into 2 parts:**
  - a) A checklist for essential steps – day-to-day usage.
  - b) Separate training/details/explanation.
- **Use "Do-Confirm," or "Read-Do" style.**
- **Refine checklist until:**
  - It achieves the desired result.
  - It is able to quickly detect serious problems.

References

1. Tidbit #8: ***Using Checklists to Define Best Practices and Improve Performance,*** Potter, N.

   http://www.processgroup.com/monthlytidbits.html#tidbit8

2. Tidbit #11: ***Using Medical Checklists to Simplify CMMI Process Development - Keeping it Very Simple,*** Potter, N.

   http://www.processgroup.com/monthlytidbits.html#tidbit11

3. ***Checklist Manifesto: How to Get Things Right, Metropolitan Books, Atul Gawande, 2008.***

4. Practical Project and Process Documentation, Newsletter Vol. 9, No. 2, October 2002.

   www.processgroup.com/pgpostoct02.pdf

5. Getting New Practices Used and Keeping Them Visible, Potter, N., Sakry, M.

   www.processgroup.com/pgpostfeb10.pdf

6. ***Making Process Improvement Work - A Concise Action Guide for Software Managers and Practitioners***, Potter, N., Sakry, M., Addison-Wesley, 2002.

   www.processgroup.com/tpgbook.html

Acronyms

- PP/WP: Project / Work Planning
- PMC/WMC: Project / Work Monitoring & Control
- CM: Configuration Management
- REQM: Requirements Management
- MA: Measurement Analysis
- OPF: Organizational Process Focus
- OPD: Organizational Process Development
- OT: Organizational Training
- PI: Product Integration

REQM Practice definition from CMMI

- SP 1.1 Develop an understanding with the requirements providers on the meaning of the requirements.
- SP 1.2 Obtain commitment to requirements from project participants.
- SP 1.3 Manage changes to requirements as they evolve during the project.
- SP 1.4 Maintain bidirectional traceability among requirements and work products.
- SP 1.5 Ensure that project plans and work products remain aligned with the requirements.
- GP 2.1 Establish and maintain an organizational policy for planning and performing the process.
- GP 2.2 Establish and maintain the plan for performing the process.
- GP 2.3 Provide adequate resources for performing the process, developing the work products, and providing the services of the process.
- GP 2.4 Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process.
- GP 2.5 Train the people performing or supporting the process as needed.
- GP 2.6 Place selected work products of the process under appropriate levels of control.
- GP 2.7 Identify and involve the relevant stakeholders of the process as planned.
- GP 2.8 Monitor and control the process against the plan for performing the process and take appropriate corrective action.
- GP 2.9 Objectively evaluate adherence of the process and selected work products against the process description, standards, and procedures, and address noncompliance.
- GP 2.10 Review the activities, status, and results of the process with higher level management and resolve issues.

