

# Not Here, But There Human Resource Allocation Patterns

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# Prioritizing Strategic HR Allocation in Business Processes

“Companies that actively and regularly reevaluate where resources are allocated create more value and deliver higher returns to shareholders.”

- McKinsey 2016

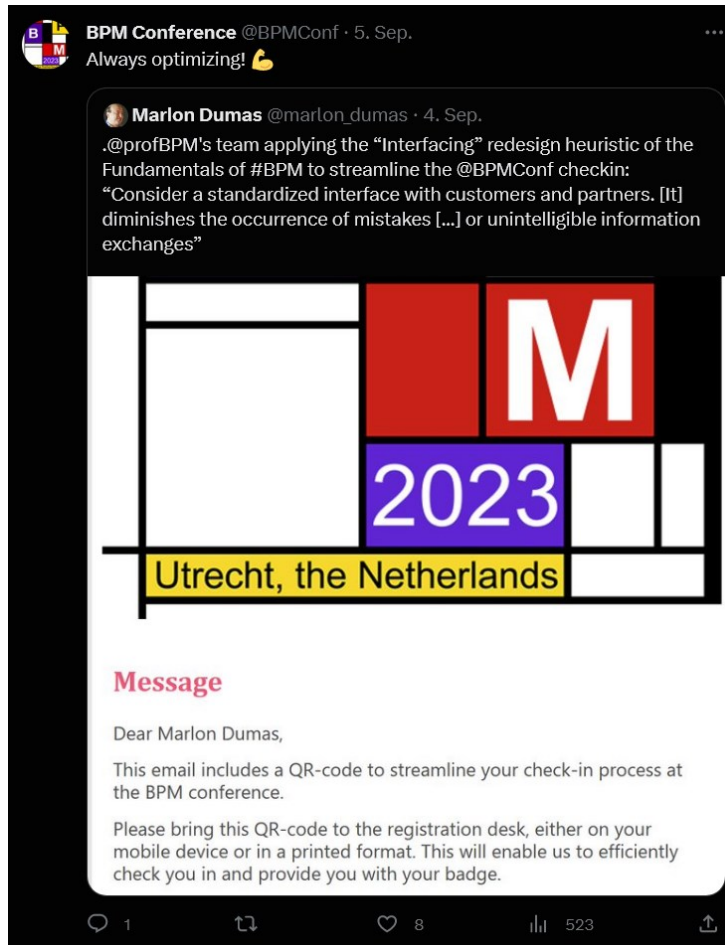
- **Today**, challenges like the shortage of skilled workers and opportunities like automation put pressure on (re)organizing work.
- In BPM (human) resources are a core aspect of business processes**
- Business Process Redesign (BPR) identifies process improvements
- Business processes can be analyzed and improved from a resource-perspective - all humans and non-humans involved
- Prior literature has focused on resource allocation practices, however,
  - It is diverse and fragmented
  - Not much attention has been given to *human* resource allocation

Sources: Beverungen et al. 2020, McKinsey 2016

 RQ: How can human resources be best allocated to tasks when redesigning business processes?

# Always optimizing!

## Patterns document BPM best practices found in the field



For this work: **Pattern = Heuristic**

- Patterns propose general solutions for specific problems that reusing experience instead of rediscovering it.
- BPR patterns suggest changes to an existing business process to influence its operation in certain ways
- BPR patterns provide inspiration for creating improvement options
- BPR patterns are rarely invented but rather observed from the field and compiled for utilization:
  - documented as text, sometimes augmented by illustrations and implementation examples
  - In collections that address generic business processes or focus domains such as customer-centric service design, healthcare, blockchain-supported processes, sustainability....  
*Gamma et al. 1995, Mansar & Reijers 2005, Zellner 2013*

 We opt to design a collection of **human resource allocation patterns (HRAP)**

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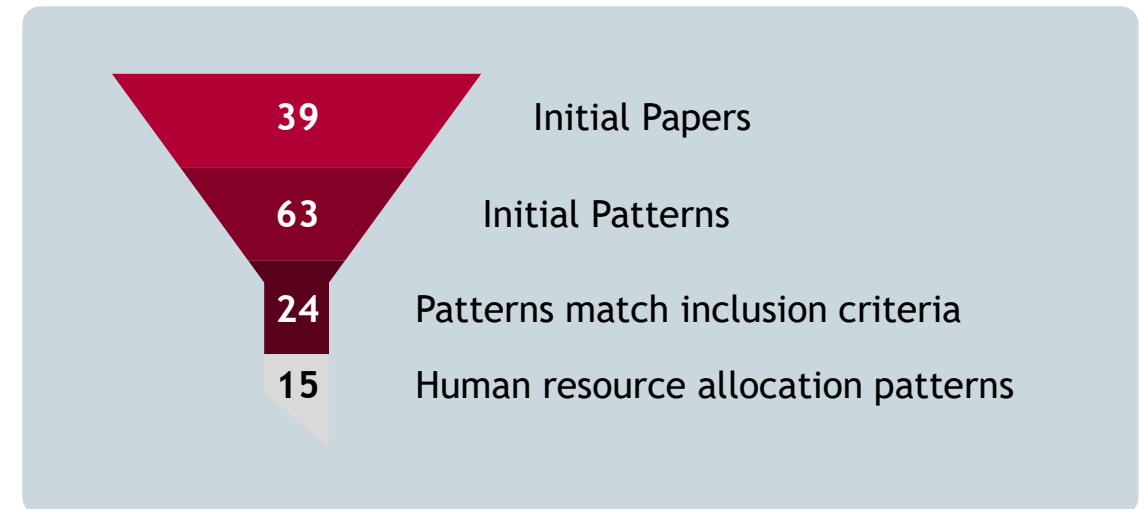
# Finding and refining HRAPs in a Two-Phase approach

## I) Development Phase

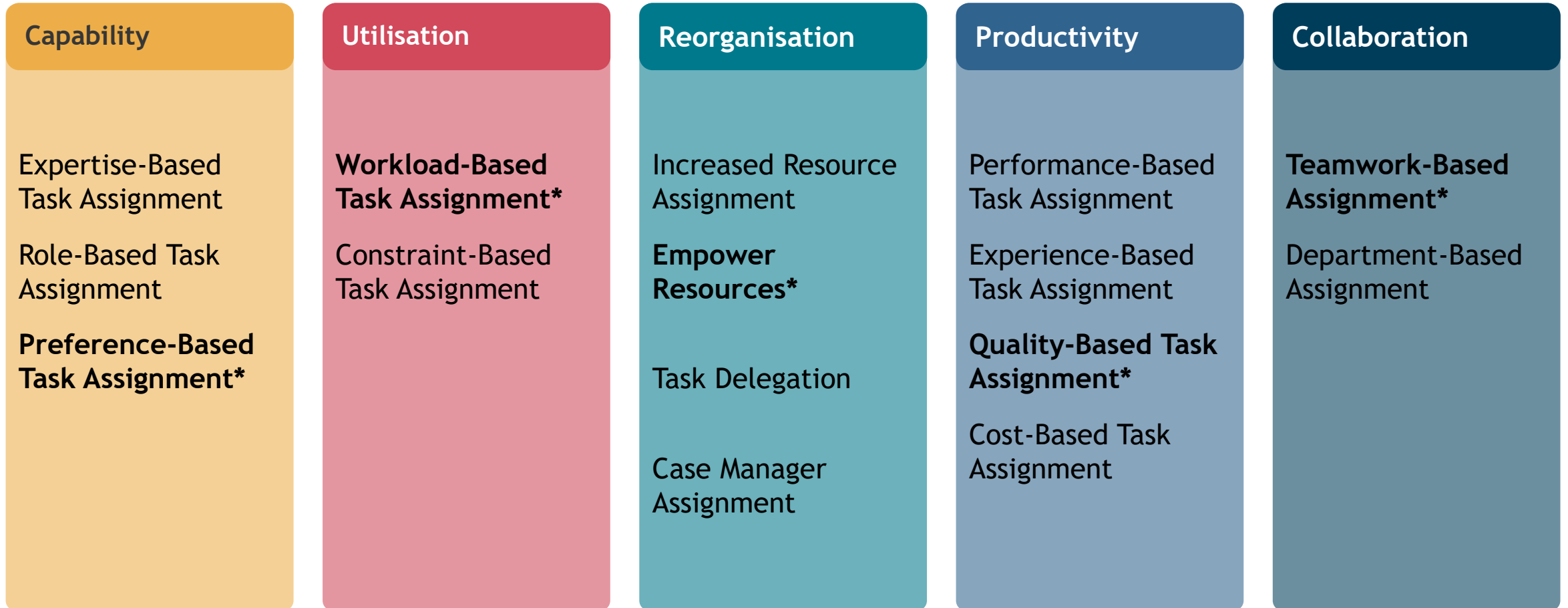
- Literature review to identify pattern sources in *15 years of BPM conference proceedings*, and the databases *ABI INFORM*, *EBSCOhost*, *ScienceDirect*, *JSTOR*, and *Google Scholar*
- Out of 848 search results, we identified *39 relevant papers*
- 63 patterns were filtered via inclusion criteria:
  - Relation to human resources
  - Pattern impact can be evaluated during BPR
  - Pattern implementation should focus a process, not the whole organization
- 24 patterns were merged and documented as a set of 15 HRAPs for refinement

## II) Refinement Phase

- Semi-structured interviews with 10 process improvement experts recruited within our network
- The 15 patterns were discussed and evaluated for usefulness and pervasiveness
- Patterns were refined in accordance with the feedback



# Five categories of Human Resource Allocation Patterns



Also find the patterns on <https://process-pattern.app/book/cheat-sheets/human-centric-process-design>

\* Detailed on the following

## We evaluated the HRAPs in 10 expert interviews

#	Role of Interviewee and experience	Industry and no. of employees
1	Head of Organisation and BPM (12 yrs)	Real Estate (500 emp.)
2	Head of Business Process Excellence (20 yrs)	Construction Industry (32,000 emp.)
3	Business Analyst (6 yrs)	Academic Consulting (250 emp.)
4	Business Performance Improvement Consultant (4 yrs)	BPM Consulting (100 emp.)
5	Business Analyst (5 yrs)	Academic Consulting (250 emp.)
6	Technical Business Analyst (4 yrs)	IT services & consulting (13.000 emp.)
7	General Manager (20 yrs)	Public Services Research and Innovation (12 emp.)
8	Head of Business Services (20 yrs)	Insurance (159 emp.)
9	Senior Business Analyst (5 yrs)	Finance and Insurance (13,000 emp.)
10	Senior Business Analyst (6 yrs)	Banking (700 emp.)

Per HRAP, experts rated the

- **perceived usefulness:** not useful (0), somewhat useful (1), useful (2), and very useful (3)
- **perceived pervasiveness:** not at all (0), rarely (1), sometimes (2), and often (3)

In qualitative comments, the experts shared their thoughts on the HRAPs

- **Asking for clarification**
- **Reinforcing the value of patterns**
- **Sharing practical examples or experiences**



**Let people do what  
they love to do**

## Category Capability

The patterns in this category allocate people based on their expertise, role, and preference.

**Assign a task to a person based on the person's preference. Preference is defined as a set of activities that the person has an inclination towards and hence may have been executed more often along with higher execution efficiency by a person.**

**Example:** In Scrum, preference-based task assignment allows team members to choose tasks based on their preferences and past efficiency. For instance, if a team member prefers doing programming tasks, they can choose to work on those tasks.

**Impact:** Quality+, Time+, Cost+

**Implementation:** The pattern requires knowledge of the requirements of the process and record keeping of individual preferences of team members. Team members' preferences can be inferred from their past involvement in certain tasks or directly provided by them. During the assignment, tasks and preferences of team members are matched and assigned to those with the corresponding preferences.



**Allocate tasks based on individuals' incomplete workload**

## Category Utilisation

This category assigns tasks to people based on workload and execution constraints within a process.

**Assign tasks to people based on their workload, which refers to the number of task instances started but not yet completed by a person.**

**Example:** A team of customer service representatives receives a high volume of incoming calls. The workload-based task assignment pattern assigns new incoming calls to the representative with the least amount of calls in progress.

**Impact:** Quality+, Time+, Cost+

**Implementation:** The implementation of workload-based task assignments requires the tracking of tasks and their completion status for team members, along with a system to assign tasks based on each person's workload.





**Empower workers for  
more decision-making  
authority**

## Category Reorganization

Allocation to individual tasks or a process based on strategic and tactical decisions taken by the organization

**Grant decision-making authority to people rather than seeking approval from a supervisor.**

**Example:** To streamline the insurance claim process, resources are empowered to make decisions in place of middle management, reducing approval bottlenecks.

**Impact:** Time+, Cost+

**Implementation:** To empower resources, gather information about their capability, productivity, collaboration, and utilisation. Based on this information, identify resources capable of making decisions and provide them with the necessary authority. Communicate the reasons behind the decision to empower resources and the expectations and constraints associated with the decision-making authority.



**Allocate tasks based on past feedback or quality metrics**

## Category Productivity

Human resource allocation based on their efficiency evidenced through historical data

**Assign a task based on prior internal or external customer feedback or quality metrics.**

**Example:** An organization evaluates the performance of its customer service representatives based on customer feedback and assigns high-performing representatives to handle complex customer complaints.

**Impact:** Quality+

**Implementation:** For quality-based task assignments, details related to the customer evaluation feedback for resources need to be known. At the time of allocation, people with the best quality feedback will be chosen for the task.



**Allocate based on collaborative experience: handover time, interactions, diversity**

## Category Collaboration

This category of patterns allocates people based on interactions within a team and with different functional units within an organization.

**Assign a task to a person based on their experience working with other resources, which is measured by factors such as the time taken for handovers, number of interactions, and diversity of experience with different people.**

**Example:** The review risk task in a loan application process requires two resources to work together. The task is hence allocated to resources A and B as they have evidenced working well together in the past.

**Impact:** Quality+, Time+, Cost+

**Implementation:** For a teamwork-based assignment, a prior understanding of the interaction of a resource with other resources needs to be known. Based on that understanding, appropriate resources will be allocated.

## We evaluated our findings in 10 expert interviews

- HRAPs were perceived useful
- Collections of BPR patterns help making improvement knowledge explicit
- Focussing humans in BPR brings up new topics and challenges for the organisation of work:
  - HR positions != BPM roles
  - Humans individually develop in their role and organization
  - Mental wellbeing is a theme that should be further examined

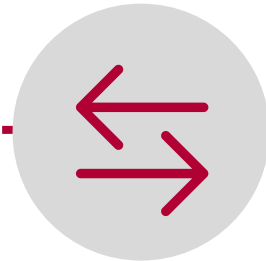
Category	Pattern	p. usefulness <sup>1</sup>		p. pervasiveness <sup>2</sup>	
		Mean	Std.Dev	Mean	Std.Dev
Capability	Expertise-based task assignment	2.6	0.49	2.7	0.46
	Role-based task assignment	2.4	0.66	2.7	0.64
	Preference-based task assignment	2.1	0.83	2.0	0.63
Utilisation	Workload-based task assignment	2.5	0.50	2.7	0.46
	Constraint-based task assignment	2.5	0.50	2.5	0.50
Re-organisation	Increased resource assignment	2.6	0.66	2.3	1.00
	Empower resources	2.5	0.50	2.1	0.70
	Task delegation	2.5	0.67	2.6	0.66
	Case manager assignment	2.8	0.40	2.6	0.49
Productivity	Performance-based task assignment	2.1	0.83	1.7	0.46
	Experience-based task assignment	2.1	0.70	2.3	0.64
	Quality-based task assignment	2.5	0.67	2.1	0.83
	Cost-based task assignment	2.5	0.50	2.7	0.46
Collaboration	Teamwork-based assignment	2.4	0.66	2.3	0.64
	Department-based assignment	2.1	0.70	2.5	0.50

# Research Contribution and Summary



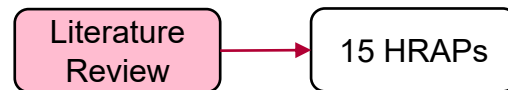
## Research Question

“How can human resources be best allocated to tasks when redesigning business processes?”

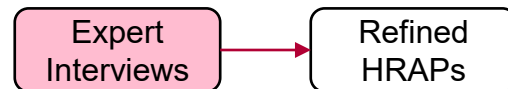


## Study Design

### Development Phase

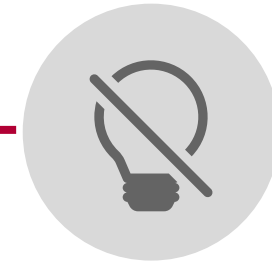


### Evaluation Phase



## Contributions

- 15 HRAPs
- Evaluated by experts
- A shared repository for academia and practice



## Limitations

- Selection Bias
- Rigor of the Literature Review
- Rating the value of patterns with single-scale items
- Relatively small sample



Provide automated/assisted support for BPR

Resource redesign patterns - with a different emphasis - not process performance optimisation

- E.g., upskilling, well-being as reasons for allocating work