Agile Solutions Model

PUMA

Architecture of a generation
of high-performance enterprises

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Agile Solutions Model

Table of Contents

- PUMA is a global framework for the Agile enterprise ......................................................... 3
- Specificities of Agile governance .......................................................................................... 4
- New formalism for the expression of requirements ........................................................... 5
  - Four classes of requirements ........................................................................................... 5
  - Four levels of iterative depth .......................................................................................... 7
  - Six resulting qualitative advantages ............................................................................. 7
  - Eight basic Agile practices ............................................................................................ 8
- The practice of “Meetings Organization” ........................................................................... 12
  - Operating principles of interviews ............................................................................... 12
  - Methodology of interviewing principles ........................................................................ 14
  - Organizational principles of the interviews ................................................................... 15
  - Technical principles of the interviews .......................................................................... 15
  - Interview facilitation techniques .................................................................................... 16
  - Ergonomic interview techniques .................................................................................... 17
- Agility – a motor for progress ............................................................................................ 18
The Agile Solution Model

PUMA is a global framework for the Agile enterprise

In large organizations, the problem of information systems evolution is not so much the creation or management of the technical project, but the formalization of a consensual expression of requirements and shared responsibilities among, most often, numerous participants. It is this problem that the Solutions Model treats.

PUMA is a dynamic framework for the evolution of business processes, information systems, and collaborative modes.

By using the backbone of the Agile movement and the technical standards that it integrates and federates, PUMA represents the first formalization of a global enterprise Agile model, coupled with a project motor, by the intermediary of a solutions model. This model was created with regard to the new order of current requirements classes and the incremental iterative principal imperatives.

The Agile Solution Model is one of 3 PUMA components. More precisely, it is the central component.

By modeling the generic high-level structures applicable to all organizations, the ambition of PUMA is to reduce the complexity of their management. If a professional who faces the PUMA solution thinks “that’s immediately obvious. I had it in mind already but I never had the time to formalize it,” then the challenge of Agility will be taken.

Figure 1. — PUMA Process for the Urbanization of the Method “Agile”
Specificities of Agile governance

Agility is a response to a challenge. Globally, it’s a company project allowing you to determine the will to fight for improvement in an open world. At root, the action of Agile places itself in a real collaborative mode whose implementation brings a concrete performance improvement in terms of maximization of on-demand goods and services in terms of their production quality.

For some people, Agility represents nowadays the updated projection of what used to be the organizational quality of the 90s – a failure in France and a success in Canada. It is true that there, the message came from on high because the head of the federal government made it a priority. The message was relayed by the provincial prime ministers to the directors of administrations and enterprises. The results were achieved in line with the effort that was made.

The observation of the Canadian administration, of the provinces, and of public enterprises allows us to measure the importance of the concept and of the global performance improvements that result.

On the other hand, wanting to initiate an Agile movement without the equal involvement and responsibility of all of the participants represents the error that must not be committed. When Agility is used by one of the parties as a tool for gaining power, failure is seen through the abandoning of the collaborative mode and disengagement of the other parties. Because of this, it is clear that organizational Agility requires collaborative modes and engagement of responsibilities that are, within the reality of hierarchical companies, obtained only very rarely without initiation and arbitration at a higher level.

Another aspect of Agility that is poorly accepted is the notion of collective responsibility. Classical project management modes are based on the principal of successive validation of intermediate deliverables and on the designation of one responsible party. This approach reflects a hierarchical way of thinking which justifies itself by the notion of individual responsibility. As for the Agile mode, it implies a consensual engagement and a collective responsibility which leads to and appropriation of the project by all actors.

Wanting Agility without the forms of engagement and the governance it implies constitutes the fatal error. Imposing Agility in an organization that doesn’t accept its values introduces chaos while removing the sanity check provided by the classical model. As the famous saying goes, “Speed and power are nothing without control and only lead to an accident.” In another register, speaking about Agility without putting into place its real principles is a less dangerous situation in the short term but it is just as common.

Some people would like to bring Agility to known concepts such as “attitude” or “savoir être,” but Agility does not come about from this type of strictly logical thinking. Agility is a philosophy of action, a dynamic and consensual engagement, based on an iterative and incremental way of working, leading to a collective responsibility.

To conclude, a project as ambitious as a state reform is not necessary for success in introducing Agile practices. The development teams who use eXtreme Programming demonstrate this every day. Using the Agile Solution Model implies a similar engagement, finding itself just at a different level of challenge and decision.
New formalism for the expression of requirements

When it comes to change management projects, Agility concerns, first of all, a formalized expression of requirements in a consensual and exhaustive manner within the framework of a dynamic, iterative, and incremental solutions model. What is more, the principles of openness and transparency, based on the simultaneous convergence of communication and engagement of all implicated resources, are also indispensable to guarantee success.

The principle of reactivity required by Agile approaches implies a joint and simultaneous action by all the actors during all of the phases of a project.

The most important point to consider is the real level of delegation that all the participants possess. The limits of this decisional autonomy must be formalized in a document of the type **project-contract.** It is generally signed during an interview before the project is launched.

Four classes of requirements

The deliverable that represents the requirements must take into account 4 **classes of requirements** that apply themselves to the following 4 **levels of concern**: strategy and implementation constraints, functional, technological and organizational.

<table>
<thead>
<tr>
<th>Level of concern</th>
<th>Determines</th>
<th>Correspondance in terms of formalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy and Constraints</td>
<td><em>why</em></td>
<td>Vision of the objectives and their priorities.</td>
</tr>
<tr>
<td></td>
<td><em>when</em></td>
<td>Budget, delay, quality and visibility risks and constraints.</td>
</tr>
<tr>
<td></td>
<td><em>how many</em></td>
<td></td>
</tr>
<tr>
<td>Functional</td>
<td><em>How</em></td>
<td>Practical description of the need in the form of requirements (functionalities, obligations and dependencies).</td>
</tr>
<tr>
<td>Technological</td>
<td><em>with what</em></td>
<td>Application of new technologies to the solution (hardware and software).</td>
</tr>
<tr>
<td>Organizational</td>
<td><em>who does it</em></td>
<td>Impact on the organization and change accompaniment.</td>
</tr>
</tbody>
</table>

*Figure 2. — Levels of concern*

During working sessions targeting “immediate formalization and validation” of these requirements classes\(^2\), these are explored chronologically in the fundamental order described in table 1.

\(^1\) *Technique characteristic of facilitated working sessions in 3 steps.*

\(^2\) *The rupture with the structural principal and grouping of Merise abstraction levels which emphasize the organizational over the logical and physical will be noted, along with the appearance of a “visibility”*
On the other hand, and all the complexity relative to the operation as well as its pertinence rests in this principle, they must be understood globally with concern for the immediate taking into account of the interactions and dependencies they lead to.

Figure 3. — Agile Solution Model

At each iteration or step (generally phases or benchmarks) and for each concern, a document with a unique structure (based on the 4 requirements classes) is used to gather information. The only distinctions will be seen by the importance taken by one or the other classes of concern, or their level of detail.

Figure 4. — Unique structure but with emphasis on the concern

parameter complementing the classic trio (budget, delay, quality) which characterize the usual constraints of projects.
Four levels of iterative depth

According to the advancement of the project, the requirements will be expressed with increasing precision. This **iterative, incremental approach** is created in a unique document with four levels of depth:

1. **Vision** (allowing for the comprehension and evaluation of the problem)
2. **Framing** (allowing for the justification and organization of the project)
3. **Specification** (allowing for the development of the solution)
4. **Functionality** (allowing for the validation of the solution)

**Six resulting qualitative advantages**

The Agile solution model is based on the notions of Requirements Classes and Iterative depth. Its application is performed by using eight basic practices from the PUMA Project Motor. Altogether, this leads naturally to 6 qualitative advantages:

- Formalized communication
- Permanent validation
- Collective approach to the solution
- Immediate reactivity to problems
- Taking of shared responsibility
- Capacity for simultaneous engineering

The simultaneous presence of user and I.T. representatives along with the Agile collaborative working mode allows you to perform **permanent validation** operations. They will be reinforced periodically by presentations of the state of development during **Shows** (or **Focus**) of the entire solution to all of the concerned parties.
Eight basic Agile practices

- Concurrent Engineering
- Unique Team
- Common Go / No Go
- Structured interviews
- Unified formalism
- Technical aspects
- Specification Framing
- Organizational aspects
- Simultaneous Engagement
- Solution
- Strategy-constraints aspects
- Founcemental aspects
- Optimized participation
- Dynamic application
- Permanent validation
- Immediate reactivity

*Figure 6. — Global vision of the Solution Model*
1 – One project team

An Agile project team is composed of the ensemble of the parties concerned: functional and technical representatives, as well as subject matter experts and real users (themselves considered experts in their own activities). This engagement as well as its form and conditions are formalized in a document named “Project Communication Plan.”

2 – Simultaneous engagement of resources

The ensemble of the resources implicated by the communication plan intervenes simultaneously beginning with the real start of the project. The goal is to obtain a simultaneous understanding of the problem by all actors and to succeed in creating a homogenous knowledge space. This approach also allows you to avoid wasting energy due to repetitions and to avoid the risk of errors, redundancy or divergence linked to multiple formulations. The understanding of the participants is global unique.

3 – Variability of participation

In order to optimize the engagement of resources, the communication plan applies a principal of variability to work groups according to the phase or depth of iteration. Therefore the presence of high-level executives, indispensable during the stakes definition or during process reconfiguration, will no longer be requested during the detailed specification phase.

4 – Structured and facilitated interviews

A collective working mode characterizes the interviews, which require an intensive participation from users. The operating mode of communications is structured in 3 steps: pre-session, session, post-session. These practices have as their aim to obtain a direct formalization and an immediate validation of the needs expressed. They need, as well as the imperative presence of the participants “for action” on the communication plan (real empowerment), the availability of an isolated and equipped work environment.
5 – Planning strategy

A practice of simulation and optimization regarding strategic choice and planning allows you to run through diverse scenarios in function of various constraints of the project (delays, cost, perimeter, quality, visibility, risk). The principal interest of this practice rests in the immediate display of incidents for each antagonistic option imagined.

6 – Application dynamic

The operations of needs and functionalities prioritization are the responsibility of the functional teams but are subject to planning game with the technical teams who have the knowledge allowing them to display technical dependencies. This practice is materialized by development choices (by usable themes or temporal stability of components).

7 – Unified formalization

At each iteration or step (generally phases or milestones) and for each concern, a document with a unique structure (based on the 4 classes of requirements) is used to formalize information. The only distinctions will be seen by the importance taken on by one or the other classes of concerns or their level of depth.

8 – Common Go/NoGo

Working from a unique knowledge-base obtained through common tasks of understanding and validation, decisions to continue the actions are taken collectively through a win-win model protecting the interests of the project along with those of the solution.
Visual summary of practices used

Figure 7. — Summary of practices used
The practice of “Meetings Organization”

Note : It is not possible to detail in this communication all of the Agile techniques used. The following example was chosen from the group of practices linked to communication, which structures and guides the needs expression and formalizes the application dynamic.

Operating principles of interviews

A collective working mode characterizes “structured” interviews. It requires intensive user participation. The operating mode of communications is organized into 3 steps: pre-session, session, post-session.

![Diagram of structured communication, operating mode]

Figure 8. — Structured communication, operating mode

The cooperative mode is the only positive possibility when it comes to creating a lasting relationship with in the interest of both parties.

In an Agile interview, the following actors are reunited simultaneously according to a previously accepted communications plan:
- know what to do,
- know how to do it,
- decide to act.

For reasons of optimal efficiency, in the case of absence of one of the necessary resources, the session is delayed (the necessary resources are designated as “for Action” on the invitation).

Pre-session

The pre-session defines the themes to address during a session and to determine the prerequisites.

The timing of subjects is the first of the techniques to use. A non-timed session leads to overshooting the planned time or delaying the treatment of certain subjects. Beyond the delay, this situation causes a stream of inconveniences, particularly when dependencies exist between treated and non-treated subjects.

The product of the pre-session is an invitation sent to the participants.
Here, in outline form, is the structure of the pre-session steps:

- Listing the subjects.
  - Putting in place teams per subject.
  - Assigning a pilot to each subject.
  - Defining objective levels per subject.
  - Listing the pre-requisites.
- Timing the steps.
- Identifying the actors.
  - For action.
  - For information.
- Verifying the assignments.
- Issuing the invitations.

**The pre-session is an exercise in organization**

**Session**

The session is a step in the progressive resolution of problems. The principle is a search for consensus among the participants, followed by decision locking.

The animator uses the timing defined during the pre-session to obtain coherent advancement.

The programmed subjects are treated and closed successively without backtracking. The treatment of the subjects is performed by direct resolution, by consensus or by arbitration.

The points that cannot be treated immediately are subject to a piloted action point. Decisions taken are subject to a formal immediate validation.

The product of a session is a report summarizing the validated decisions and the action points that remain open.

Here, in summary, is the structure of a specification–validation session:

- **Introduction** to the session.
  - Presentation of the subjects and the timing.
- **Treatment** of subjects.
  - Direct resolution by consensus or arbitrage.
  - Deferred resolution by opening an action point.
- **Conclusion** of the session by recapitulation
  - of validated decisions,
  - of individual action points.

**The session is an exercise in communication.**

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3 To make decisions regarding modification of the organization.
Post-session

The post-session confirms the closing of all the subjects and associated action points. The product of the post-session is materialized by building up a solution development plan.

The post-session is an exercise in formalization

Methodology of interviewing principles

In terms of communication, a formal work validation protocol must be established before launching the project. It is part of the Communication plan.

Note: An informal circuit should, however, be put into place between participants in the project and their hierarchy of origin. In order to avoid all misunderstanding, it is necessary to explain to the hierarchy the differences between the action principles that belong to transversal projects and their usual practices of direction.

The distinction that must be made between the specification session and the validation session is of the greatest importance.

The project requirements are specified during the specification sessions where the work group is composed essentially of end-users and operational executives. The production of this work group must then be validated at a higher level during a session of general validation (Show or Focus).

During a validation, there is no question of redoing the specification work but simply confirming the pertinence, or, in case of divergence, to ask for a deeper explanation of the subject.

In the case where a validation session transforms itself into a specification session and shows the difference in vision between end-users and the hierarchy, this is a clear sign of malfunction in the organization. The manager of the Communication plan must then react by modifying the composition of the work groups to integrate a higher level of management, or, instead, the project gets stuck.

Sometimes, the subject at hand implies modifying very concretely the management practices that do not allow you to revise decisions. This situation is not simple to treat. When it is possible to obtain the attention of the executives concerned, it is necessary to offer them brief information about the distinction between the detailed specification and the general validation, about the notion of concern granularity and about the indispensable iterative depth level in terms of a sanity check against a dangerous and unproductive mix of:

- functional requirements,
- technical requirements,
- organizational impacts,
- development constraints.

This necessity for a minimum of rigor is vital in projects where the real complexity is hidden under the appearance of functional simplicity.
The assistance to users (functional teams) must be from the field and general support. An efficient functional team is capable of making functional suggestions that are up to date in the details and realities of business processes.

Therefore, the members of the functional team of a specific project are selected on the basis of their:

- mastery of the business within the daily operational reality,
- projective vision of the foreseeable evolution of the context
- representation with regards to other users,
- affirmed interest for the improvement of the working tool.

It is necessary to guarantee organizational conditions to these ground-level professionals that allow them to apply themselves full time to the project if necessary. The quality and the profitability of the project come at this price

**Organizational principles of the interviews**

In current projects, the relationships between the IS development partners or process configurations are complex enough to render classic forms of management null and void.

The function of the management of the unique project therefore makes room for consensual action and collective responsibility.

This fusion of relations between technical and functional teams belongs to the Agile approach which revolutionizes at the same time the consensual vision of engagement and the collective responsibility that results from it.

In rigid organizations, a partnership can still exist that is composed of a functional coordinator and a technical coordinator. The former generally comes from the “business” department concerned, and his or her mission consists in imposing the applied dynamic. The latter represents the functional team to integrate the technical dimensions to the requirements expression. Both of them will be carriers of the same project

**Technical principles of the interviews**

**Organization of interviews**

- Structuring the work sessions (3 steps)
- Frequency and duration variables in function of the phase.
- Number of participants optimized in function of the phase.
- Maturity of the group (2/3 positives and the rest **challengers**).

**Actors and roles**

- Basic participants (information transfer, validation)
- Formalizing user (summary of the discussion).
- Secretary user (typing up the events)
- Modeling participant (direct modeling of the discussion).
Working environment

- Materials environment and specialized software.
- Specialized communications room (conference, video projector).
- Unidirectional communication (external isolation if necessary).

Interview facilitation techniques

The new approach to formalization as well as the new interview form requires a great deal of rigor. Therefore, it is often necessary to invite animation and facilitation specialists to meetings and even, occasionally, experts in “live” solution formalization.

High-performance methodological approaches and Agile methods have long required the structure named GAR (Group Animation and Rapport).

GAR is generally organized around a facilitator whose mission is to obtain a formal and consensual expression of requirements using his or her knowledge of interview techniques, forecasting, and conflict management.

During requirements expression, the facilitator will use the dual skills of project experience and mediation to transform what was a confrontation between two cultures or two powers into a collaboration that is enriching for the actors and efficient for the project and the enterprise.

If it is imperative that the facilitator be neutral, the participants can, as for them, come from the parties involved in the project.

Facilitating is a complex and sensitive job. It is based on mastery of human relations as much as on modern communication tools and techniques. Here, therefore, with no other ambition but to describe the simple principle and a few basic techniques, are three elementary lists to allow you to understand its utility and actions.

Specialists in facilitation often apply techniques such as the Process Communication Model, Transactional Analysis, or Neuro Linguistic Programming. PUMA proposes a synthetic and simplified fusion of these approaches in its own utility model of Neuro Agile Collaboration Facilitation.

Practical objectives of the facilitator

- Master group dynamics.
- Organize the development of subjects.
- Increase participation.
- Drive out conflicts.
- Obtain a reasonable progression.
- Re-center the subjects.
- Reformulate “unclear” information.
- Respect priorities, time management.
- Formalize and validate a synthesis “live”.
Basic techniques of the facilitator

- Question-test: Clarification of a point.
- Call to “one”: Requesting a particular opinion.
- Call to “additional information”: Prolongation of the study.
- Question-echo: Opinion of the questioner.
- Question-relay: Confirmation by return.
- Question-reminder: Asking for more information.
- Question-mirror: Elucidation of an unaddressed point.

Ergonomic interview techniques

In order to facilitate the work of all the participants and to improve productivity, the facilitator must know and respect certain keys to the ergonomics of intellectual work.

Official medical studies attest to certain constraints that the physical imposes upon the mental that should be taken into account. Here are a few examples given by professor Patrick Georges, a doctor specializing in the human brain and the cognitive and visual management of cockpits.

The knowledge worker has two peaks of productivity per day, but they are not of the same nature. In the morning, the temperature of the brain is lower. Three hours after waking up, we find ourselves at the height of a period of productivity which facilitates access to our short-term memory, which engenders creativity. Some time after the midday meal, the brain is warmer, et the zones facilitating verbal expression are preferred.

From these observations, it is evident that it is preferable to organize meetings in the afternoons and to reserve the mornings for research and production.

Another principle is justified by the latency time of the brain to move from a deep mode of analysis and understanding to a mode of implementation. Several dozen hours can be required; therefore, do not wait for Monday morning to plan the week with your teams; organize yourself by Friday, and of course, in the afternoon.

Noise is not just an interruption, but also a breaking of thought. Research performed on getting back to optimal activity after an interruption leads to recommending an answering machine.

Messages will be consulted globally during a fixed period (during breaks) in order to preserve long work periods without interruption.
Agility – a motor for progress

From a detailed description of the fundamental differences between predictive methods issued from Cartesian rationalism and Agile methods issued from pragmatic empiricism, the deepest rupture concerns the apprehension of complexity. In the formulation of requirements, this aspect is certainly not theoretical.

For almost twenty years, the difficulties encountered during information systems development or during process configuration have displayed gaps in the classical management approaches when faced with this double problem. Innovation in terms of IS and NTIC, when it reaches a certain level, fundamentally affects the heart of the business and naturally leads to putting into place process reconfigurations. The organization is therefore faced with several distinct projects simultaneously.

The introduction of multiple constraints (delays, budget, expertise, visibility, adaptable and moving perimeters, variable project management levels or application quality), imposes, therefore, a formal development structure in terms of actions and responsibilities. The acquisition of methodological “savoir faire” for management according to goals and using collaborative methods is found, to be indispensable.

At the center of the debate, the necessity for an iterative development method guided and secured by a formal action process is imposed; these two aspects are registered in a variable level of methodological quality and service. The principal reasons that legitimize the effort required to migrate to Agile techniques are hereby defined.

Beyond the quality of requirements expression and the mastery of projects, the main point of using an iterative, incremental method based around the user is the dynamism it leads to in the organization, along with the acceptance of change that it favors.

Taking part in an efficient response, the Solutions Model finds itself at the convergence of the majority of evolutionary problems of the company.

Considered as a tool, the Solutions Model allows for rational and consensual instantiation of a needs expression, generally made more complex by the involvement of multiple decision-makers taking into account multiple needs: business, technology, economic and human constraints, etc. The Solutions Model also leads to important gains in terms of reduction of production delays and increases in application quality. But the most important aspect to consider concerns the organizational impact.

Putting into place the Solutions Model goes beyond the simple production of a solution, as high-performing and useful as it is. The Solutions Model turns out to be a power means of enriching working modes. In transforming conflictual interpersonal relations into exchanges and responsibility sharing, it facilitates the fluidity of communications as well as the adaptation of collaborative ways of working.
Table of illustrations

Figure 1. — PUMA Process for the Urbanization of the Method “Agile” .............................. 3
Figure 2. — Levels of concern .............................................................................................. 5
Figure 3. — Agile Solution Model ......................................................................................... 6
Figure 4. — Unique structure but with emphasis on the concern ........................................ 6
Figure 5. — Unique document structure ............................................................................. 7
Figure 6. — Global vision of the Solution Model ................................................................. 8
Figure 7. — Summary of practices used ............................................................................... 11
Figure 8. — Structured communication, operating mode .................................................. 12

Concerning the use of the PUMA method, its author Jean-Pierre Vickoff as well as TEAMLOG, the company with which he collaborates in creating TMF (Teamlog Methodology Framework), wish to render the theoretical principles accessible to the entirety of the profession by regularly publishing, via the media and the Web, on its structure and its practices by the intermediary of professional organizational principles www.Entreprise-Agile.com