Tecnológico de Monterrey

Sprint 3 - Processes & Vision

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13 de Mayo de 2025

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Development and Deployment of Software Systems (Gpo 101)

Nowadays, the software industry in Mexico is facing significant challenges for processes standardization, product quality, adaptability to new changes and more important, international competition. In order to deal with these circumstances, **MoProSoft**, as the Mexican Model for **SMEs**, provides a solid organizational structure. Therefore, we can improve this model by providing it with the strong qualities that Scrum offers us, an agile and efficient framework for rapid and iterative development. As a result of this mix, we can provide the industry with a robust model proposal, adapted to the current local market necessities with international standards.

As we stated previously, our model integrates **MoProSoft v2.0**, with **Agile** methodologies, such as **Scrum**. We see that combining these standards is highly recommended for the Mexican software industry for the following reasons:

- Its structured approach is based on international standards such as **ISO/IEC 12207**, **ISO/IEC 15504** (now **ISO/IEC 33000**), and **ISO/IEC 29110**.
- The adaptability and scalability of the model, especially useful for micro, small and medium enterprises (**MSMEs**).
- Its ability to align strategic objectives with operational execution through three clearly defined hierarchical levels.
- The incorporation of agile events that encourage inspection, adaptation and continuous improvement.

Involved Standards

MoProSoft v2.0

- National model for process improvement in software companies.
- Based on **ISO/IEC 12207** (software life cycle) and **ISO/IEC 15504** (process evaluation), currently integrated into the **ISO/IEC 33000** family.
- Supports the definition and improvement of processes, roles, responsibilities, and resource management.

Scrum Guide 2020

- Agile framework for the incremental development of software products.
- Establishes roles (Scrum Master, Product Owner, Developers), artifacts (Product Backlog, Sprint Backlog, Increment), and inspection and adaptation events.

ISO/IEC 29110

- International standard for Very Small Entities (**VSEs**) that develop software.
- Compatibility and alignment with **MoProSoft**.

ISO/IEC 33001

- Process Capability Assessment Model.
- Provides guidelines for formal process assessment and continual improvement.

Diagram for Proposed Model

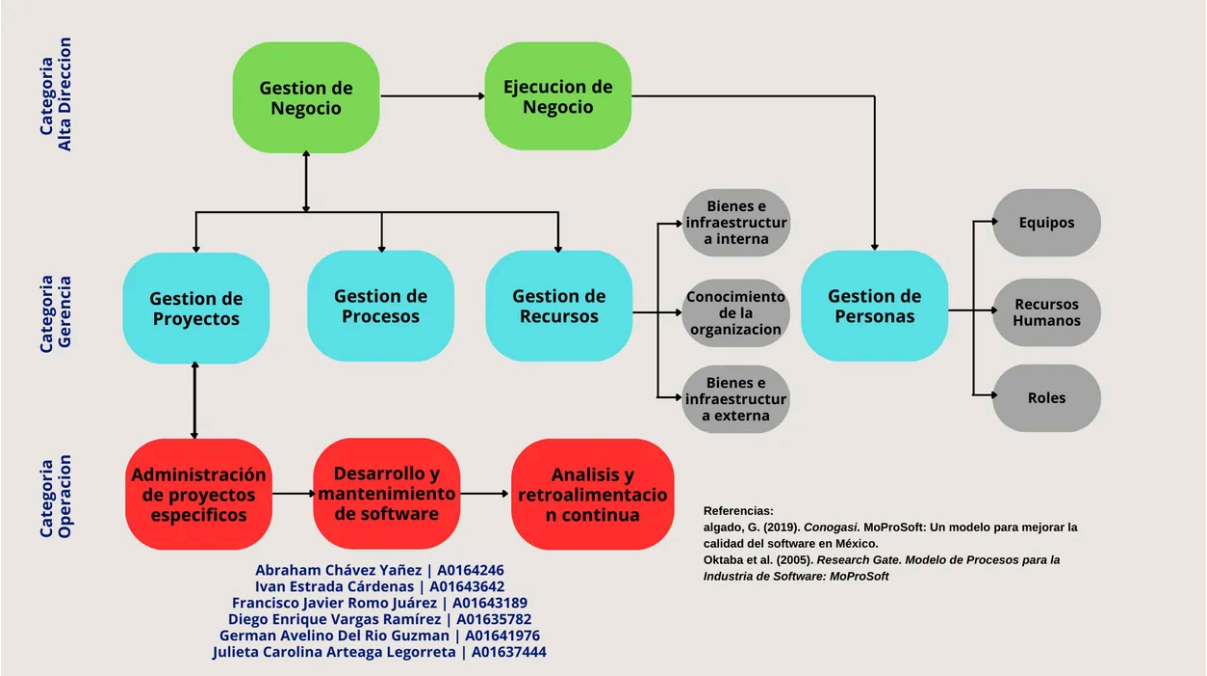

Diagram 1 - Model proposition

Model Levels

From the previous diagram, we are able to appreciate three main levels which section the important stages of the cycle of the model, each of these complies with a different purpose, which together ensure that a quality project is developed.

Level 1: Senior Management Category

- Includes Business Management and Business Execution.
- Establishes the vision, mission, and organizational objectives and oversees strategic ºalignment.
- **Justification:** Provides overall direction and control of the organization, ensuring coherence between projects and the overall strategy.

Level 2: Management Category

- **Includes:** Project Management, Process Management, Resource Management, and People Management.
- Responsible for planning, supervising, and managing resources and processes to meet the objectives established by senior management.

- **Justification:** Ensures the proper functioning and coordination of key processes that link strategy with technical execution.

Level 3: Operations Category

- **Includes:** Management of specific projects, software development and maintenance, analysis, and continuous feedback.
- Focused on the execution of technical tasks, software development, maintenance, and product improvement.
- **Justification:** This is the productive level that transforms strategy and planning into tangible, deliverable results.

Advantages of the Integrated Model

- Improves product quality through standardized processes.
- Facilitates certification and compliance with international standards.
- Fosters a culture of continuous improvement.
- Strengthens collaboration and communication across hierarchical levels.
- Promotes efficiency and reduces delivery times.

Use Case Examples

1. **Web development SME in Guadalajara**
    - Implements **MoProSoft** to organize its internal processes and uses **Scrum** for **agile** project execution. This allows it to access government tenders and improve the quality of its service.

2. **Mobile app startup in Monterrey**
    - Applies the model's three-tier structure to consolidate its growth. The model allows it to scale its operations without losing efficiency, maintaining quality in each product iteration.

Conclusion

The model integrated with **MoProSoft** & **Scrum**, represents a solid foundation, scalable and aligned to the current and real necessities of the software industry in Mexico. Its implementation benefits the professional growth and improvement of the sector, ensures competitiveness and lets Mexican industries integrate successfully to the national and international market.

References

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