A PROCESS REFERENCE MODEL AND A PROCESS ASSESSMENT MODEL TO FOSTER R&D&I MANAGEMENT IN ORGANIZATIONS: MGPDI

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MGPDI

- New Brazilian model to improve Research, Development and Innovation (R&D&I) management in organizations
- Focus:
  - Process improvement
  - Assessment
- Target audience: any size and type, is not only for software organization

Timeline

2008

- Created the MGPDI Methodology

2011
2012

- Courses of MGPDI Methodology in Brazil

2014

- MGPDI Methodology activities were reactivated (SOFTSUL-UNOCHAPECÓ)

2015

- new MGPDI Model - a process model to foster the R&D&I Management in organizations.
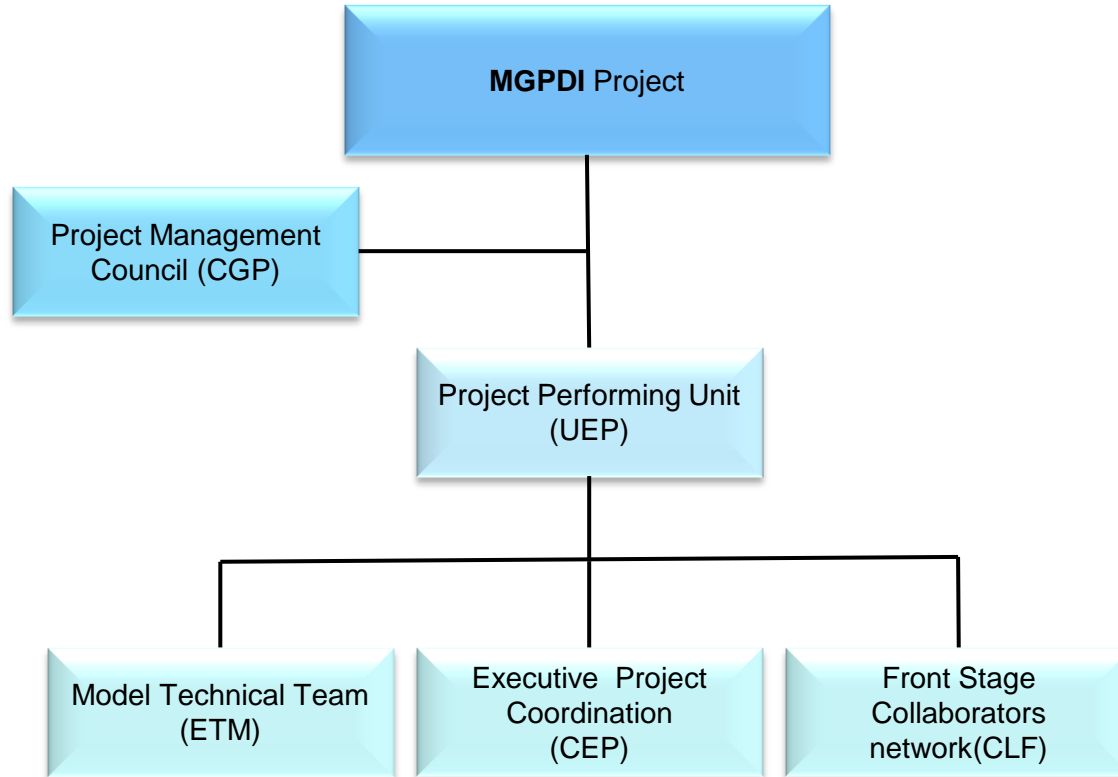
2016

- Created beta version of guides
  - PRM – Process Reference Model
  - PAM – Process Assessment Model
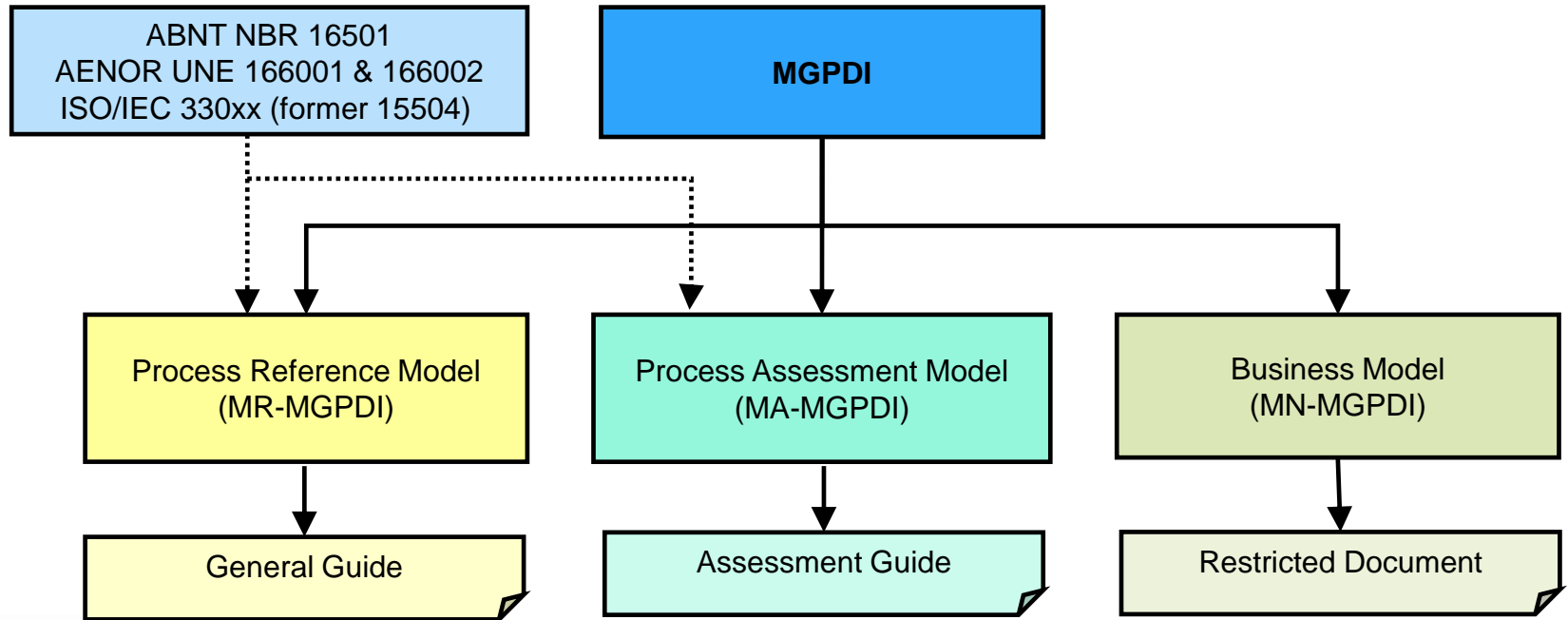 - Validate the Models (3 pilot projects)
  - Assessors are trained

•2017

- Review guides
  - PRM MR-MGPDI Guide
  - PAM MA-MGPDI Guide
  - **Go2Market**

MGPDI - Project organizational structure

MGPDI - Components
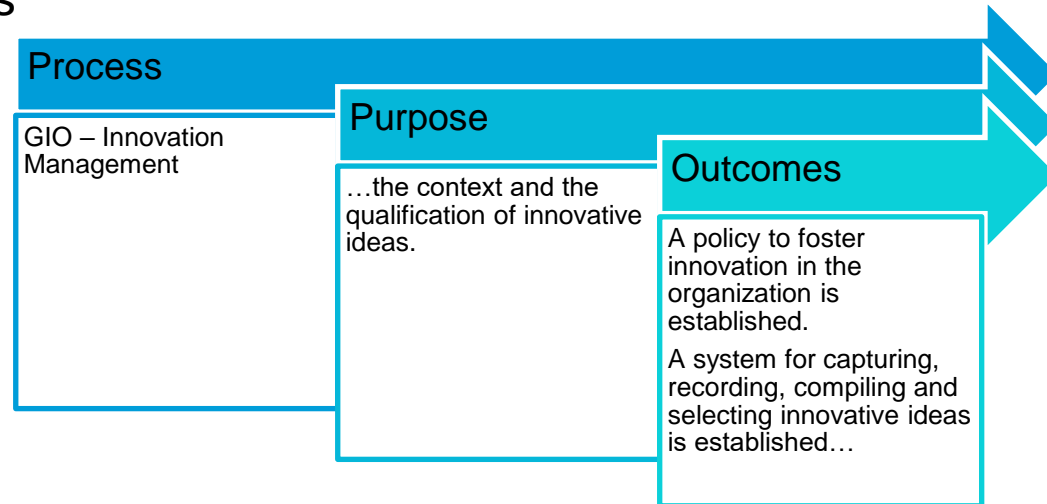
PRM – Process Reference Model MR-MGPDI – General guide

- Define a set of processes that can collectively support the primary aims of a community of interest

- Domain: Management of Research, Development and Innovation (R&D&I) in organizations

- Community of interest: Practitioners, instructors, implementers and assessors of the MGPDI model, and students, professors and researchers

PRM – Process reference model MGPDI General guide

- The **MGPDI General Guide** provides:
  - a general description of the MGPDI model
  - details the Process Reference Model (MR-MGPDI) and common definitions

Process	Purpose	Outcomes
GIO – Innovation Management	…the context and the qualification of innovative ideas.	A policy to foster innovation in the organization is established. A system for capturing, recording, compiling and selecting innovative ideas is established…

Area	Process	Purpose (To establish and maintain…)
Innovation	GIO – Innovation Management	…the context and the qualification of innovative ideas.
	GPE – Research Management	…new knowledge from research in innovation.
	EIN – Innovation Strategy	…a strategic innovation plan and to define a set of significant techniques and tools to support the management of innovative business.
	GCI – Innovation Cycle Management	…the processes related to the management of the innovation cycle.
	GPP – Intellectual Property Management	…activities regarding patents, transfers and records on innovation.
Management	GPI – Innovation Project Management	…each innovation project.
	GRI – Risk Management	…the uncertainties and risks that may occur during the project.
	GPO – Portfolio Management	…innovations and projects that are necessary, sufficient and sustainable in order to meet the strategic objectives of the organization.
Support	GOV – Governance	…governance initiatives creating a favorable environment for innovation in organizations.
	GIN – Indicator Management	…the indicators that can measure and assess innovation management in organizations.
	GCO – Configuration Management	…the integrity of versions of items related to the process work products.
	GQU – Quality Management	…a set of definitions and factors related to the quality of process work products.
	GMU – Change Management	…activities and responsibilities to ensure the integrity of the model allowing that suggestions for improvements and exception treatments can be implemented.

MODELO DE GESTÃO
PESQUISA, DESENVOLVIMENTO
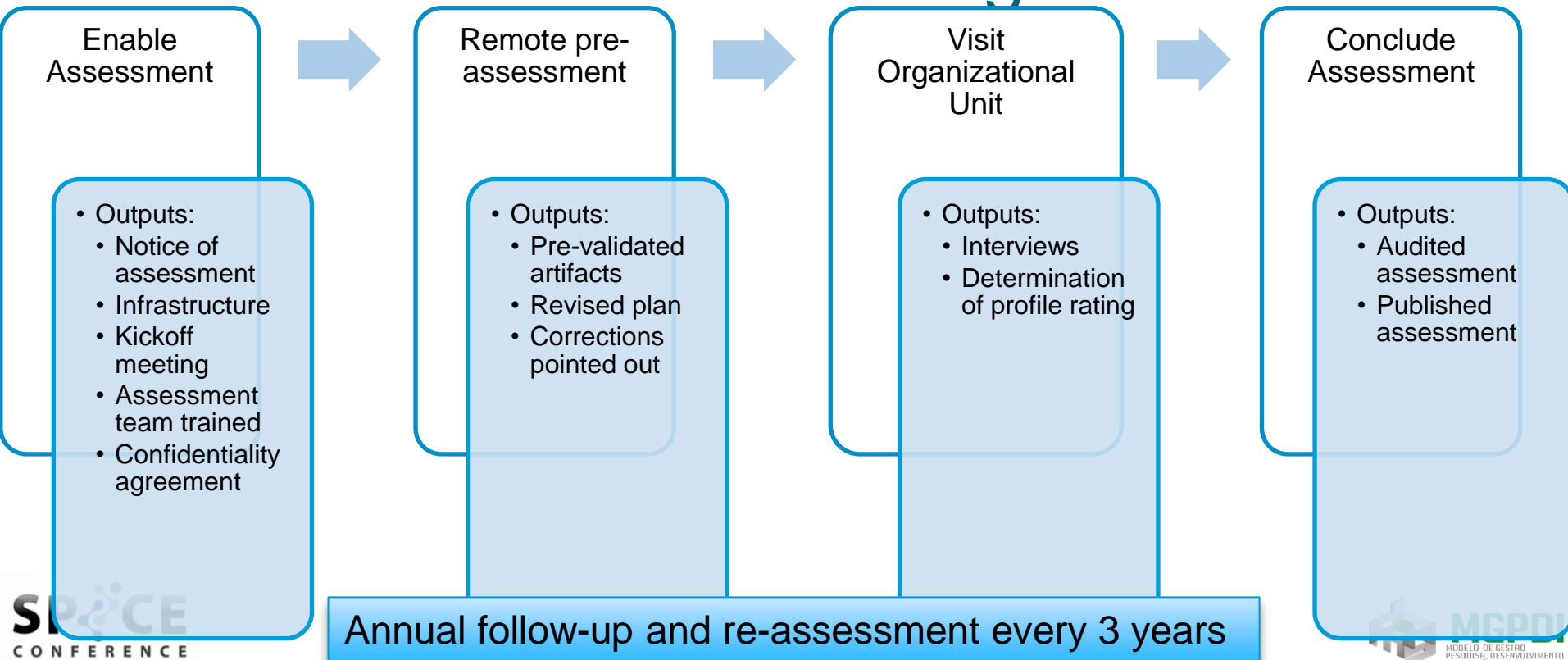E INOVAÇÃO

PAM – Process assessment model
MA-MGPDI – Assessment guide

- Define a assessment process detailing its activities, tasks, tools, artifacts, assessment participants, process quality levels and rating scale

- Community of interest: Practitioners, instructors, implementers and **assessors** of the MGPDI model, and students, professors and researchers

Profile	Process	Process Attributes (PA)
I - Performed processes	GIO – Innovation Management GPI – Innovation Project Management GIN – Indicator Management GOV – Governance GPE – Research Management	• PA 1.1: Process is performed
II – Managed processes + Profile I	GRI – Risk Management EIN – Innovation Strategy GCI – Innovation Cycle Management GMU – Change Management GCO – Configuration Management GQU – Quality Management GPO – Portfolio Management	• PA 2.1-2.2: Process performance and work products are managed
III – Established processes + Profile II	GPP – Intellectual Property Management	• PA 3.1-3.2: Process is defined and deployed

MGPDI - Process assessment model MA-MGPDI – Assessment guide

Enable Assessment

- Outputs:
  - Notice of assessment
  - Infrastructure
  - Kickoff meeting
  - Assessment team trained
  - Confidentiality agreement

Remote pre-assessment

- Outputs:
  - Pre-validated artifacts
  - Revised plan
  - Corrections pointed out

Visit Organizational Unit

- Outputs:
  - Interviews
  - Determination of profile rating

Conclude Assessment

- Outputs:
  - Audited assessment
  - Published assessment

Annual follow-up and re-assessment every 3 years

Tools

MR-MGPDI

SGPDI
- Identification, design, and validation of an innovative idea
- Assists in the development and implementation of innovation projects, including risk monitoring.
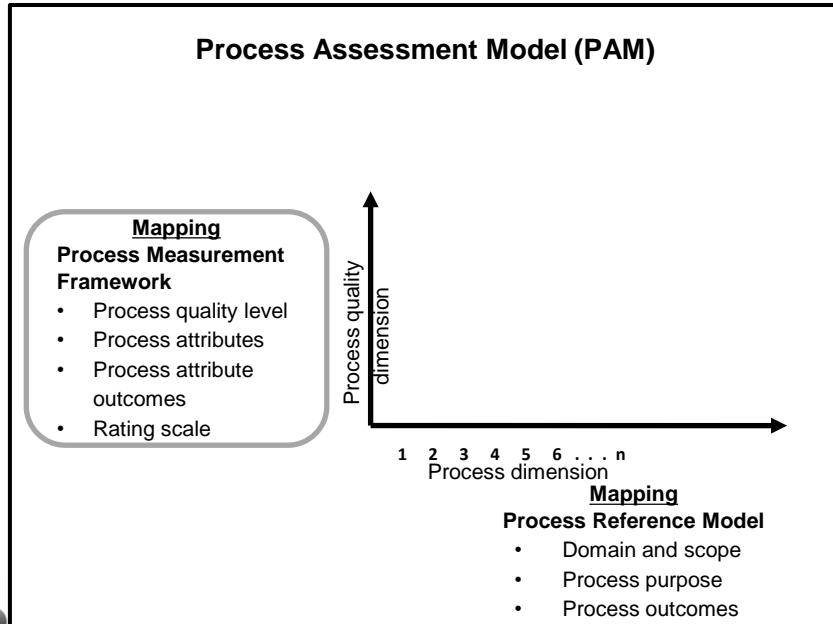
MA-MGPDI

- **Appraisal Assistant - AA**
- Validation of pieces of evidences, visualization of processes by profile, and generation of assessment reports
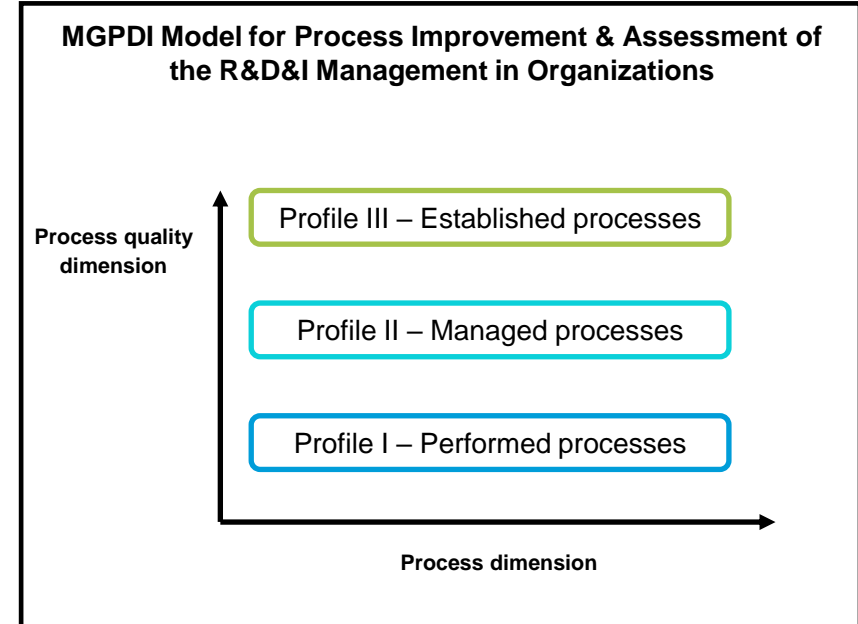
Assessment feedbacks

Relation between 330xx & MGPDI

Process Assessment Model relationships
(ISO/IEC 33001:2015. p.12)

MGPDI process profiles

Process Assessment Model (PAM)

Mapping
Process Measurement Framework
- Process quality level
- Process attributes
- Process attribute outcomes
- Rating scale

Process quality dimension

1 2 3 4 5 6 . . . n
Process dimension

Mapping
Process Reference Model
- Domain and scope
- Process purpose
- Process outcomes

MGPDI Model for Process Improvement & Assessment of the R&D&I Management in Organizations

Process quality dimension

Profile III – Established processes

Profile II – Managed processes

Profile I – Performed processes

Process dimension

Pilot - Demographic characteristics

Company	A	B	C
Location	Porto Alegre-RS, Brazil	Porto Alegre-RS, Brazil	Chapecó-SC, Brazil
Industry	Software	ICT (Information and Communication Technologies)	Software
Public or private	Private	Private	Private
Small, medium or large enterprises *	Medium	Small	Small
Approx. company annual revenue * (USD 1 = R$ 3)	Greater than USD 1,2 million and less than or equal USD 100 million	Greater than USD 120 thousand and less or equal to USD 1,2 million	Greater than USD 120 thousand and less or equal to USD 1,2 million
Approx. number of staff	38	31	23
Product portfolio	• DRS-Audience - Tool for recording audio, video and text of court hearings • DRS-Plenary - Plenary session recording tool, audio and video distribution with shorthand management • DRS-Inquiry - Tool for audiovisual recording of testimony and expertise in police investigations	• Self-Service Terminals - Product with modern design that adapts to various types of environments • Thin Client - Compact CPUs with integrated network processing • Mini PC - Solution for applications that need a better balance between CPU performance and multimedia • POS Fusion Touch - Screen with Touch SAW technology that provides usability in harsh environments (kitchens, dusty environments, etc.) where other Touch technology is inefficient • Digital Signage (DS) - Products for total visual communication with the public of commercial companies	• Slim ERP - Solution with a focus on solving all problems in a single system • Middle ERP – Solution that works by creating control parameters for: taxes, processes and use • High End ERP – Full ERP based on simplicity and customer focus with features beyond what a system presents

Assessment results of the organizational units

Process	Process Purpose (rating)			Process Attribute AP 1.1 (rating)			Final Result		
	Company			Company			Company		
	A	B	C	A	B	C	A	B	C
GIO – Innovation Management	F	F	F	F	F	F	SATISFIED Profile I	SATISFIED Profile I	SATISFIED Profile I
GPI – Innovation Project Management	F	F	F	F	F	F			
GIN – Indicator Management	F	F	F	F	F	F			
GOV – Governance	F	F	F	F	F	F			
GPE – Research Management	F	F	F	F	F	F			

Remark. Rating used: F: Fully Achieved, L: Largely Achieved, P: Partially Achieved, N: Not Achieved

MGPDI – Innovation Indicators

Assessed indicator	Company A	Company B	Company C
Number of new Ideas	-	19	60
Index of Ideas that become projects	14%	31,5%	51,6%
Index of Innovation Projects completed in time	80%	-	-

Final considerations

- Next steps, the 2017 MGPDI Annual Plan foresees:
  - a complete revision of the MGPDI General Guide to detail Profile II and Profile III;
  - the consequent fixes in the MGPDI Assessment Guide;
  - the development of a beta version of the MGPDI Implementation Guide aiming at providing non-prescriptive guidelines for the Implementation Consultants;
  - the training of 12 (twelve) people
- Main challenge in 2017 is **Go2Market** of:
  - the MGPDI model (Profile I – Performed processes) in the marketplace, both in Portuguese in the five Brazilian regions and in Spanish in Latin America and the Caribbean (LAC) countries, seeking totalize over 12 (twelve) MGPDI implementations and assessments in organizations
  - course and exam C1/P1 – MGPDI Introduction both face-to-face and online distance learning

QUESTIONS ?