

Business, Economic, and Common Transformation Projects–The In–House– Implementation of The Polymathic Transformation Framework (IHPTF)

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The Research Question is:

Which IHPTF characteristics and solutions are needed for the *Entity's* successful transformation?

Introduction

- It concerns Polymathic IHPTF capabilities.
- This article analyses the role of an in-house transformation framework and proposes the Applied Holistic Mathematical Model (AHMM) for the IHPTF (AHMM4IHPTF).
- The transformation environment can be used by any team member without any prior computer sciences qualifications.
- *Many standards and agile methodologies exist; today they are very advanced and can support refinement processes.*
- *Adapted Flexible Frameworks like TOGAF and IDEs to support projects.*
- *The process of transforming a traditional business environment into sets of Composite Building Blocks (CBB). And patterns.*

Introduction

- *The proposed framework uses measurable Critical Success Factors (CSF) and Critical Success Areas (CSA) to define the optimal IHIPTF*
- *Project's complexity as well as the usage of underlying Decision-Making System (DMS) and enterprise architecture can be evaluated by a tuneable CSF based mathematical model.*
- *The IHIPTF is based on: 1) RP to generate BBs and patterns; 2) A Mathematical Model; 3) Framework; and 4) Digital Transformations (DT) ...*
- *IHIPTF identifies a Median Methodology (MDTCAS), Business processes to transform the Legacy Environment into a lean and automated system.*

Introduction

- *The IHIPTF supports Project's Complex Implementation Phase (PCIP) that requires a set of in-depth (Refinement) RP, DMS, KMS, EA, and implementation skills.*
- *The Architect of Adaptive Business Information System (AofABIS) is to be considered as the optimal choice.*

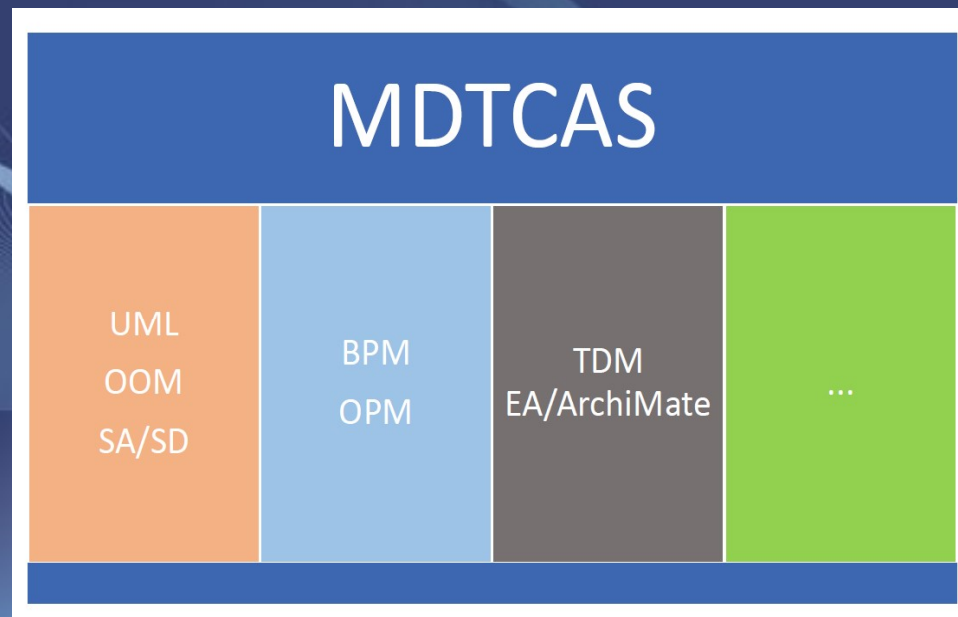


Figure 1 describes the relation between the MDTCAS and the Project's artefacts. The Framework's and RDP's interactions, include three components: 1) DMS; 2) KMS; and 3) IHIPTF

Keywords

- Transformation Projects and Frameworks.
- Refinement, and MDTCAS.
- Manager's Profile.
- Business Transformation Projects.
- Enterprise Architecture.
- Mathematical Model.
- Artificial Intelligence.
- Profile Management.
- Human Resources.
- Critical Success Factors.
- Performance Indicators.

An RP and Blocks based Project generic pattern

- A set of patterns that can support a Project.

- Refinement concepts.

- Agile Methodologies and Business CSFs.

- Standards, like TOGAF, UML...

- Holistic EA concept and AI fields.

- Atomic architecture development method.

- Mapping concept and the Conceptual view.

- Atomic services and their granularity.

- Services' registries and integration / APIs.

- Service life cycle management / Agility

- Atomic artefacts.

AGNOSTIC IMPLEMENTATION ENVIRONMENTS

- IHPTF based Projects.
- AI based development.
- The holistic meta-architecture concept.
- The micro enterprise components.
- The micro architecture concept.
- The business artefacts concept.
- The micro artefact concept.
- The choreography pattern of atomic services.
- The management of atomic and micro services.
- The neurons based decision making system.
- The fast and continuous development and deployment concept for a BTP global architecture.

A Generic Refinement/RP based IHPTF approach



A Generic IHPTF approach

- The goal is to attain the defined enterprise change and innovation cycles.
- This article's aim is to influence the attitude of a transformation project and implementing of IHPTF.
- The research concept is a part of the framework, which is composed of various modules.
- The used mixed method can be considered as a natural complement to conventional Quantitative Analysis and Qualitative Analysis methods presented in the Proof of Concept (PoC).

THE MATHEMATICAL MODEL

- The hyper evolution of information technology methodologies and business engineering disciplines made transformation project's management very complex and these facts for the Environment to have a central decision making module that is based on a mixed method.
- The mathematical model or the decision making module selects one solution that has a value based on factors.
- The evaluation value attached to each node in the tree is a state with complex data and functions containing many constraints. The decision tree's implementation is an HDT object that can be used and tested in the proof of concept



Event:

The Open Group London 2014

Business Transformation Manager Profile

Dr. Antoine Trad

The riskiest factor in transforming a traditional business environment (BE) into a lean and automated BE is the role of the business and (e-)business transformation manager (BTM) in the implementation part of the business transformation project (BTP). The basic profile of such a business transformation manager has not been sufficiently investigated in a holistic manner in order to design the BTM's profile; and that is the main goal of the author's research (Trad, Kalpic, IMRA, 2013).

This research based presentation deals with the optimal profile of the BTM that has to manage the implementation phase of complex business transformation projects. These business transformation projects require a specific set of business architecture and implementation skills, especially for the final and very difficult implementation phase. The BTP's implementation phase is the major cause of high failure rates (CapGemini, 2009).

The authors have constructed their research on the main fact that only around 12% of business organizations successfully finish innovation-related business transformations projects (Tidd, Bessant, 2009). Therefore, there is a tremendous need for more research on the BTM profile. Business transformation projects require BTMs who have the necessary business and information technology architectural skills such as TOGAF® for the implementation of complex business process management (BPM) based systems (Kelada, DBA Thesis, 2009).

Key takeaways: TOGAF, architect of adaptive business information systems, business transformation projects, business transformation manager's profile, transformation project implementation, business integration, innovation failure rate and (e-)business

Premier Reference Source

Using Applied Mathematical Models for Business Transformation

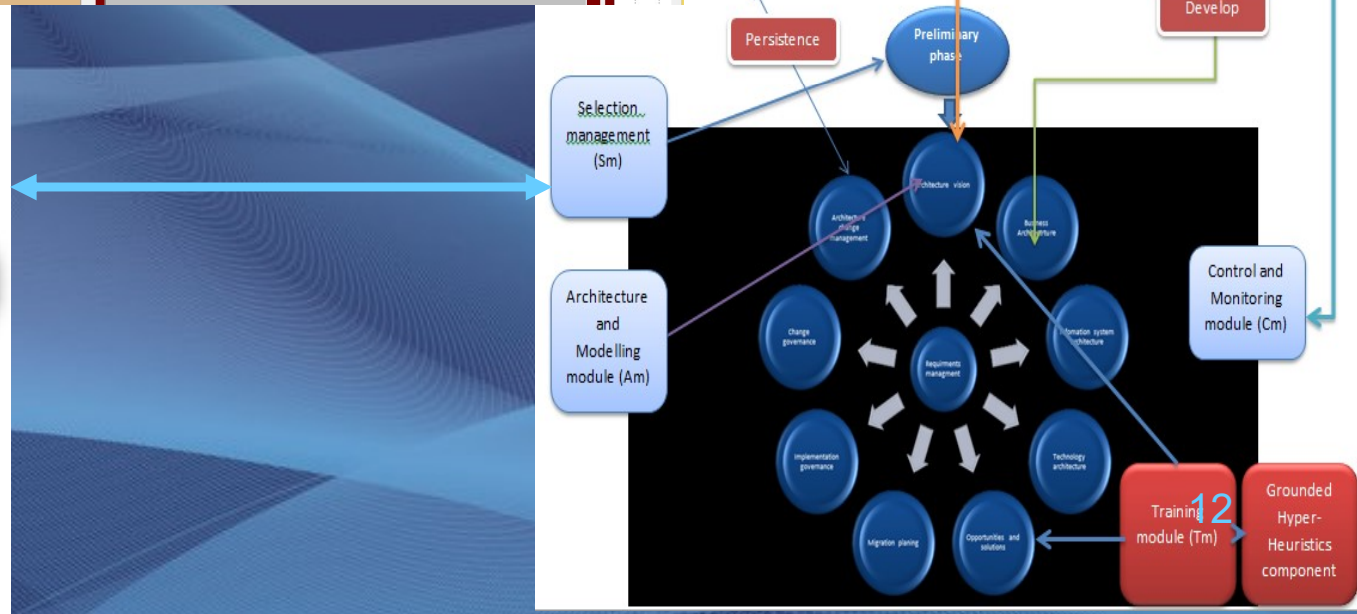
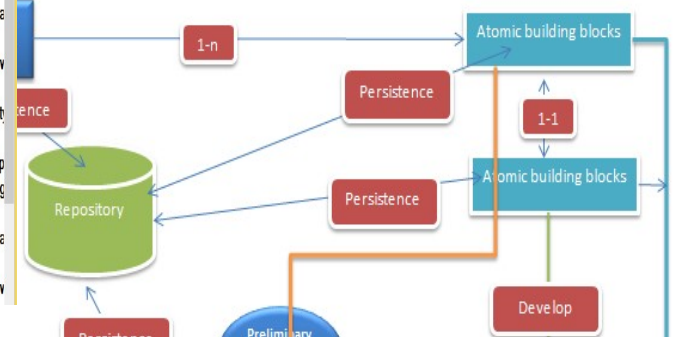
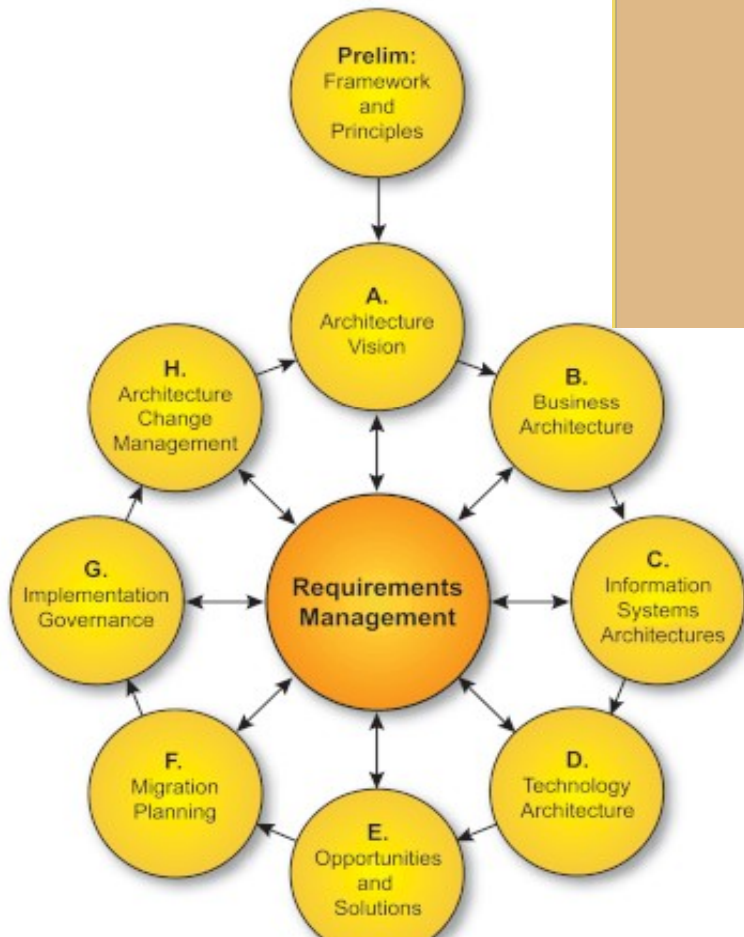
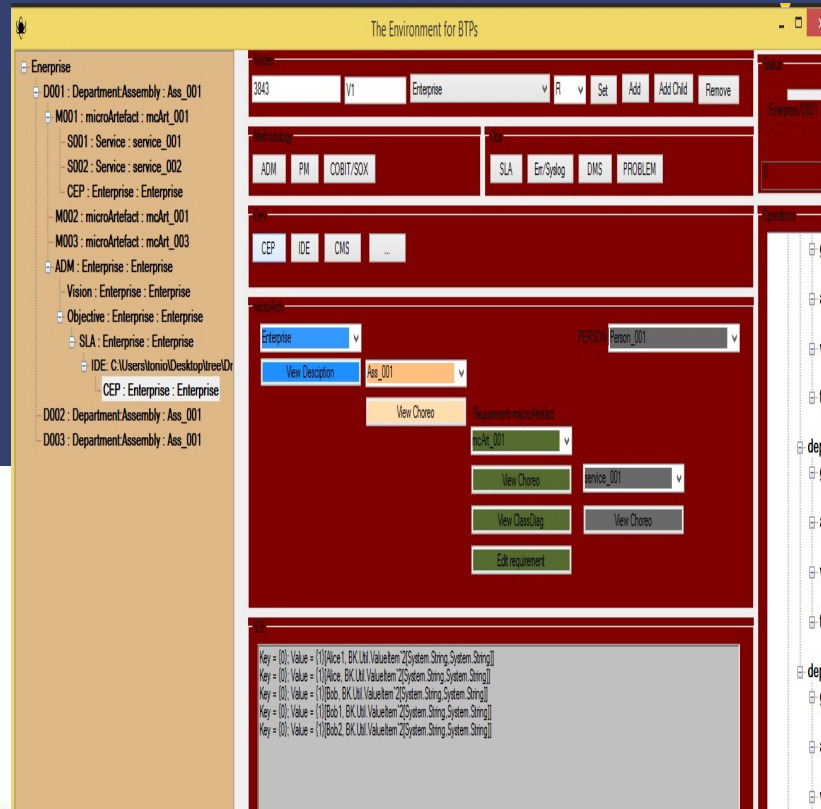


Antoine Trad and Demir Kalpic

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ELSEVIER

IT IS A CONCRETE FRAMEWORK...



Lead

- This research project's main keywords are: 1) Artificial Intelligence; 2) Enterprise Architecture; 3) Business Transformation Projects; 4) Business Transformation Manager; 5) Applied Mathematical Models; 6) Neural Networks; 7) Holisms; 8) Risk Management; 9) Decision Making Systems; 10) Artificial Intelligence; 11) Knowledge Management Systems; and 12) Innovation.
- Using the scholar engine, in Google's search portal, in which the authors combined the previously mentioned keywords and key topics; the results have shown clearly the uniqueness and the absolute lead of the authors' methodology, research and works .
- From this point of view and facts the authors consider their works on the mentioned topics as successful and useful; so the main topics will be introduced.
- Using the scholar engine, in Google's scholar search where the author combined his research's keywords and key topics; the results have shown clearly the uniqueness and the absolute international lead of the author's methodology, research and works.

The screenshot shows a Google Scholar search results page. The search query is "enterprise architecture" "decision making" "business transformation" "mathem". The results are sorted by relevance, showing 54 results. The top result is "Business Transformation Projects An Enterprise Architecture Applied Mathematical Model's Proof of Concept" by A. Trad and D. Kaljic, published in the 2018 International Conference on Applied Mathematics (ICAMCE). The abstract mentions that the EAM uses critical success factors sets, actions and applicable solutions for business transformation and enterprise architecture projects. The result of the processing of the decision making module, as illustrated in Table VI, shows clearly that the EAM is not an ...

The second result is "Business Transformation Projectst-An Intelligence Driven Development for Enterprise Architecture and Asset Management-The Basics" by A. Trad and D. Kaljic, published in the ICAMCE Journal, 2018. The abstract mentions scenarios that are sets of interactive services. Keywords—Applied mathematical model, Qualitative heuristics, Quantitative, Decision making, Enterprise architecture and Business transformation. Antoine Trad is with the Institute of ...

The third result is "The Business Transformation Framework and Enterprise Architecture Framework for Managers in Business Innovation: Knowledge Management in Global Software ..." by A. Trad, published in Human Factors in Global Software Engineering, 2019. The abstract mentions that the Business Transformation Framework and Enterprise Architecture Framework ... is a part of the Environment that uses 2 to support just-in-time decision-making ... The Enterprise AMM (EAMM) is the combination of an enterprise architecture and transformation methodologies ...

The fourth result is "A Neural Networks portable and Agnostic Implementation Environment for Business Transformation Projects the basic structure" by A. Trad and D. Kaljic, published in the 2017 IEEE International Conference on ... (ICAMCE), 2017. The abstract mentions that combined with the AIE delivers: 1) a real decision making component in ... An Intelligent Neural Networks Micro Artefact Patterns' Based Enterprise Architecture Model ... A Neural Networks Portable and Agnostic Implementation Environment for Business Transformation Projects-The ...

The fifth result is "A neural networks portable and Agnostic Implementation Environment: for Business Transformation Projects the framework" by A. Trad and D. Kaljic, published in the 2017 IEEE International Conference on ... (ICAMCE), 2017. The abstract mentions that the functional domain covers information analysis and decision making for ETP ... An Intelligent Neural Networks Micro artefact Patterns' Based Enterprise Architecture Model ... Networks Portable and Agnostic Implementation Environment for Business Transformation Projects-The ...

The sixth result is "A Transformation Framework Proposal for Managers in Business Innovation and ..." by A. Trad and D. Kaljic, published in the 2017 IEEE International Conference on ... (ICAMCE), 2017. The abstract mentions that the functional domain covers information analysis and decision making for ETP ... An Intelligent Neural Networks Micro artefact Patterns' Based Enterprise Architecture Model ... Networks Portable and Agnostic Implementation Environment for Business Transformation Projects-The ...

The Mathematical Model

- The applied AHMM4IHPTF's basics nomenclature: In this *Project* OR modules run on a pool of synchronized AHMM4IHPTF threads, in which, each AHMM4IHPTF thread launch's an HDT process

Basic Mathematical Model's (BMM) Nomenclature

<i>Iteration</i>	= An integer variable " <i>i</i> " that denotes a <i>Project/ADM</i> iteration	
microRequirement	= KPI	(B1)
CSF	= Σ KPI	(B2)
Requirement	= CSF = \bigcup microRequirement	(B3)
CSA	= Σ CSF	(B4)
microKnowledgeArtefact	= \bigcup knowledgeItem(s)	(B4)
neuron	= action->data + microKnowledgeArtefact	(B5)
microArtefact / neural network	= \bigcup neurons	(B6)
microArtefactScenario	= \bigcup microartefact	(B9)
AI/Decision Making	= \bigcup microArtefactScenario	(B10)
microEntity	= \bigcup microArtefact	(B7)
Entity or Enterprise	= \bigcup microEntity	(B8)
EntityIntelligence	= \bigcup AI/Decision Making	(B11)
BMM(<i>Iteration</i>) as an instance	= EntityIntelligence(<i>Iteration</i>)	(B12)

The Generic AHMM's Formulation

$$\text{AHMM} = \bigcup \text{ADM}s + \text{BMM}s \quad (13)$$

The Role of AI/Qualitative Models

- Learning based and not data based..
- **AI based DMS: AI systems management refers to expert systems and global systems modelling; which is supported by the EA's mapping concept. AI systems management is an approach for building and deploying intelligent systems and it replaces conventional concepts with DMS.**
- **DT based Projects replaces traditional methods ...**
- **Manager as a Cross-Functional Architect / Agile Project Management / Enterprise Architecture**
- **Understanding Organizations and the CSFs that can influence their survival and competitiveness, is only the first step towards a successful Project.**

USAGE OF EA/ AI based IHPTF

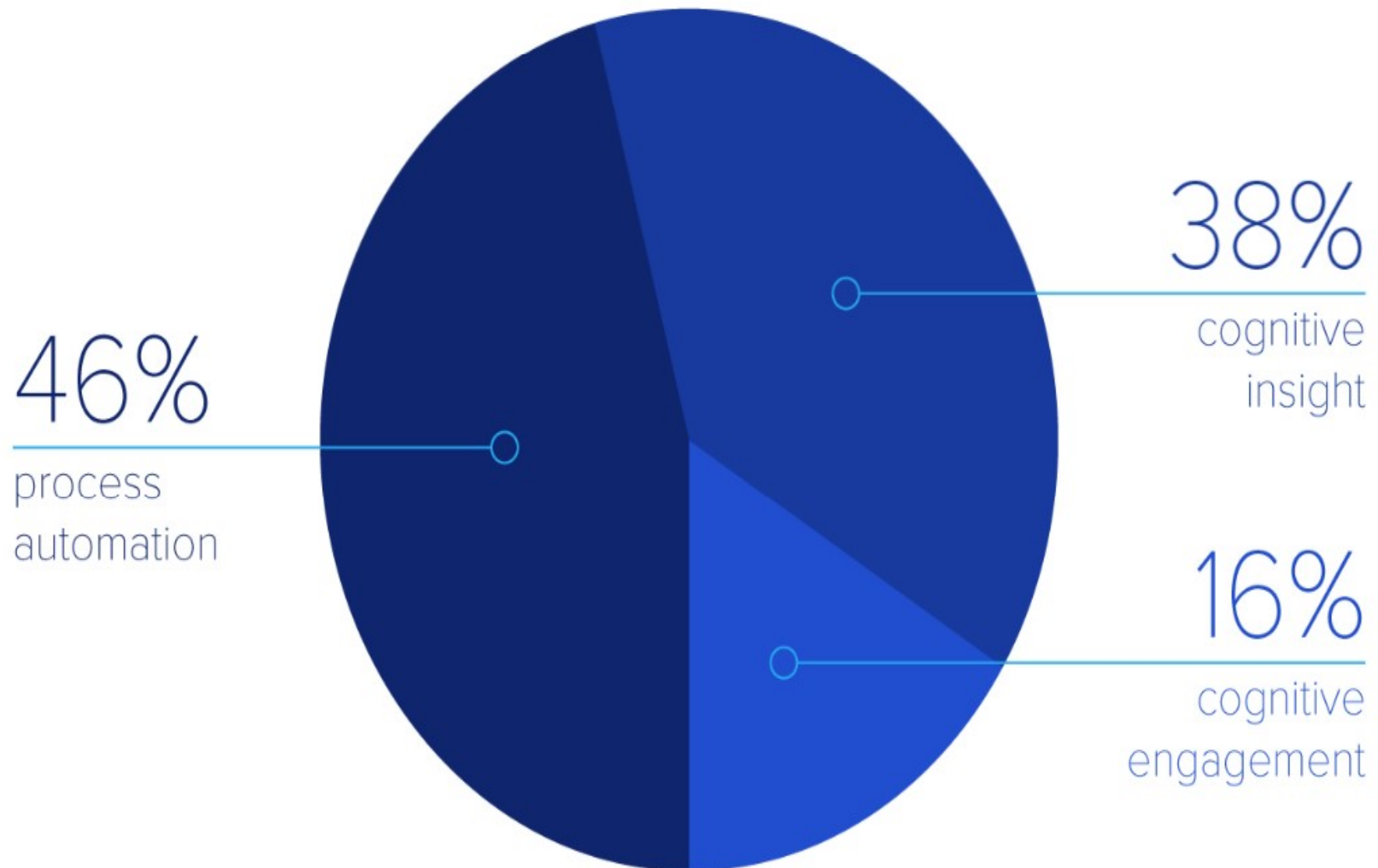
- **IHPTF for Projects.**
- **Qualitative: HDT... AR... Learning based.**
- **CBB, BBs,... Artefacts...**
- **Unit of Work as the Building Block**
- **EA, Technology, Services and Standards**
- **Enterprise Security Strategies**
- **Resources, Artefacts, Factors Management and Qualification Procedures**
- **The ADM and Phases**
- **Business Architecture**
- **A Complex and Risky Process**
- **The Knowledge Management System**
- **The Decision-Making System**

The Needed Skills... Just for EA

IT Architect Roles	Architecture Board Member	Architecture Sponsor	IT Architecture Manager	IT Architecture Technology	IT Architecture Data	IT Architecture Application	IT Architecture Business	Program or Project Manager	IT Designer
Enterprise Architecture Skills									
Business Modelling	2	2	4	3	3	4	4	2	2
Business Process Design	1	1	4	3	3	4	4	2	2
Role Design	2	2	4	3	3	4	4	2	2
Organization Design	2	2	4	3	3	4	4	2	2
Data Design	1	1	3	3	4	3	3	2	3
Application Design	1	1	3	3	3	4	3	2	3
Systems Integration	1	1	4	4	3	3	3	2	2
IT Industry Standards	1	1	4	4	4	4	3	2	3
Services Design	2	2	4	4	3	4	3	2	2
Architecture Principles Design	2	2	4	4	4	4	4	2	2
Architecture Views & Viewpoints Design	2	2	4	4	4	4	4	2	2
Building Block Design	1	1	4	4	4	4	4	2	3
Solutions Modelling	1	1	4	4	4	4	4	2	3
Benefits Analysis	2	2	4	4	4	4	4	4	2
Business Inter-working	3	3	4	3	3	4	4	3	1
Systems Behavior	1	1	4	4	4	4	3	3	2
Project Management	1	1	3	3	3	3	3	4	2

AI Types

AI Projects by Type

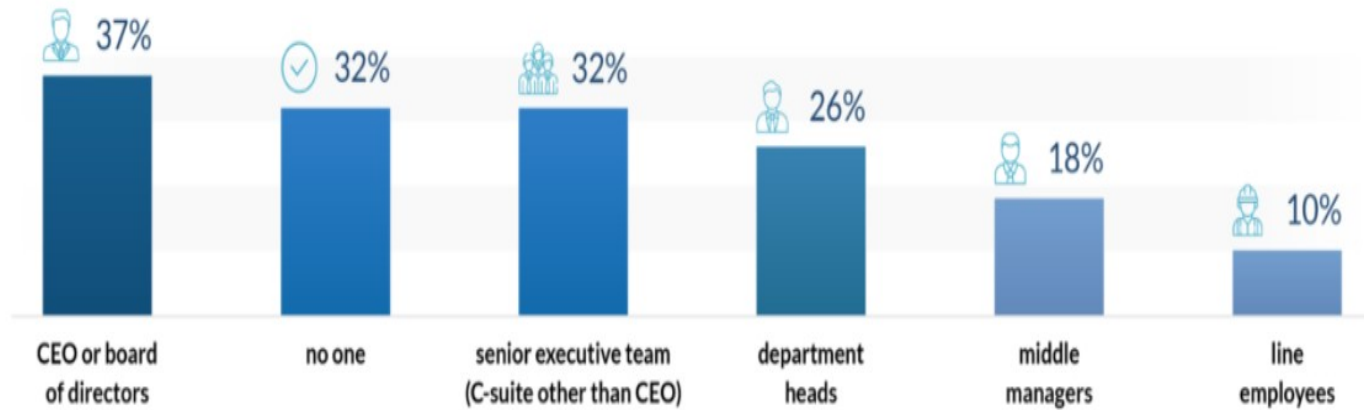


DT's Implementation

- **Projects and DT's goal is to have a common platform of Blocks, BPMs and other artefacts which improve Entity's Time-to-Market (TtM).**
- **DTs are strategic objectives, but Projects' digitizations are complex and have XHFRs.**
- **The DT uses the IHITF to disassemble legacy systems and enable the use of TDM, MDTCAS, and EA digitized models and to define DT's scope.**
- **A successful DT is the base of a successful Project that needs Polymathic skills.**

An APD viewpoint on the rejection of DTs

3 Who is holding back companies' digital transformation initiatives? Source: Franke Group



The IHIPTF PoC's phase 1 outcome is 8.80

CSA Category of CSFs/KPIs	Transformation Capability	Average Result	Table
The RDP's Integration	Mature	From 1 to 10. 9.20	1
Team's Setup	Risky	From 1 to 10. 8.50	2
Disassembling Process	Risky	From 1 to 10. 8.25	3
PEMM's Implementation	Risky	From 1 to 10. 8.25	4
FMS' Integration	Risky	From 1 to 10. 8.25	5
AHMM's Integration	Mature	From 1 to 10. 9.40	6
PRWC's Integration	Feasible	From 1 to 10. 9.0	7
TDM' Integration	Feasible	From 1 to 10. 8.75	8
Intelligence's Integration	Mature	From 1 to 10. 9.25	9
IHIPTF/Phase's 1 Outcome	Risky	From 1 to 10. 8.80	10
Evaluate First Phase			

Conclusion

- **his RDP proposes a set of recommendations on how to implement a IHPTF for Projects in any APD.**
- **The IHPTF uses FMS, PRWC, GAPA, and Factors to iteratively assert Project's feasibility and because of the low score of 8.80 (Table 10) implies that it is "Risky".**
- **HIPTF shows how to implement an Anti-Locked-In (ALI) transformation framework.**
- **his RDP uses a QQRMM concept.**

Conclusion

- The PRLR proved the existence of an important knowledge gap and XHFRs.
- The AHMM4IHIPTF and ELP based HDT support Intelligence.
- The HDT supports IHIPTF's modules reasoning, like in the case of the PRWC.
- Cross-functional/Polymathic skills are needed.
- The IHIPTF uses and interfaces existing frameworks, standards, and methodologies, like TOGAF, SWOT, Six Sigma...
- The GAPA and PRWC evaluate Projects' progress.
- The PoC checked IHIPTF's feasibility.
- The IHIPTF integration is complex and "Risky".