



"Project Management - Key Driver for Improving Construction Performance"

Mladen Radujkovic, IPMA Chair

19th AEIPRO International Congress
Granada , July 16th, 2015

INTRODUCTION

Prof. dr. Mladen Radujkovic
19th AEIPRO International Congress
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University of Zagreb, Croatia



344 years of tradition

29 Faculties

about 4,000 bachelor students/year

3 Art Academies

about 7,500 masters students/year

**University Center for
Croatian Studies**

about 400 doctors of science/year

65.000 students

6,000 teaching and

administrative staff

1669.

Leopold I Habsburg issued a decree granting the status and privileges of a university to the Jesuit Academy of the Royal Free City of Zagreb

IPMA – International Project Management Association

- Joined IPMA around 25 years ago like individual member
- One of founders of Croatian national PM association
- Serving IPMA like Vice President E&T and research (three terms), President and currently Chair of Council

THE PROJECT WORLD

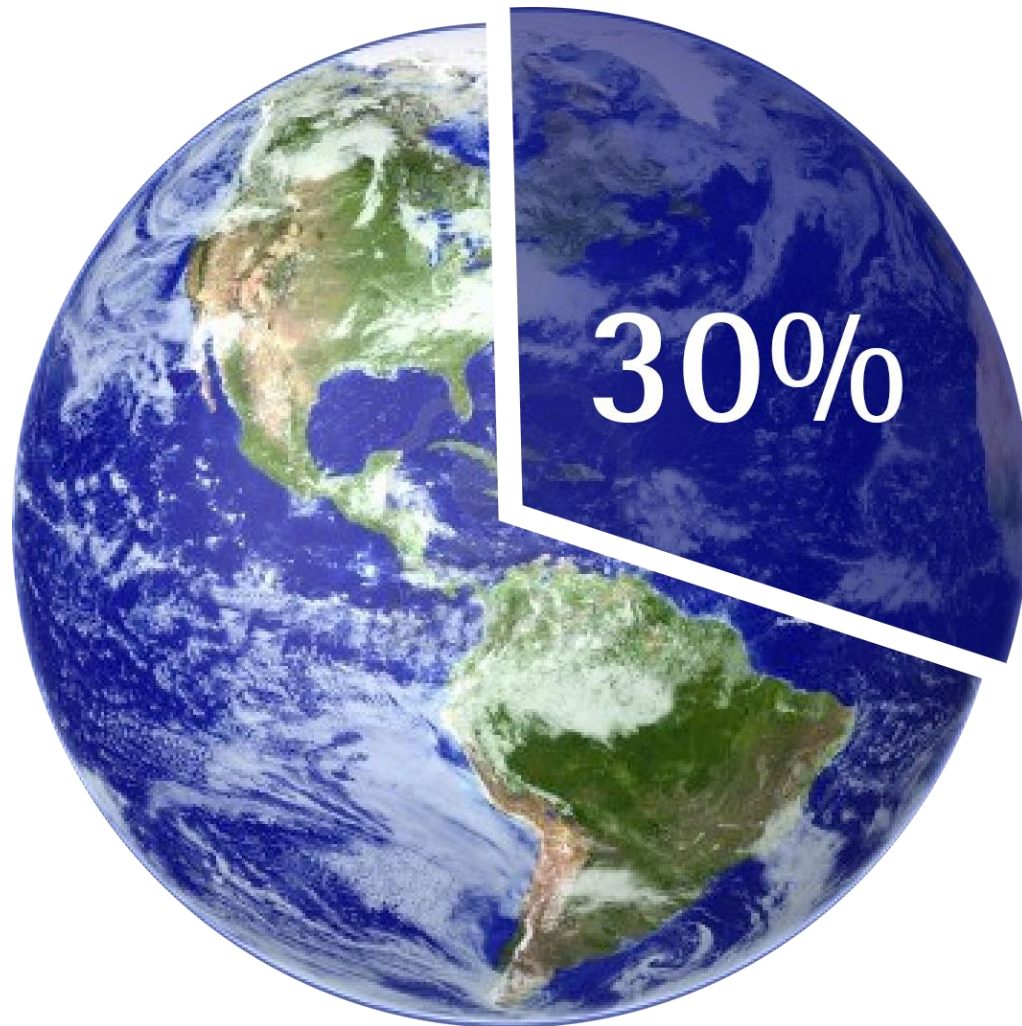
Project are present in all sectors of human activities, becoming more complex and challenging

Construction is project oriented sector

Our World = The Project World

- 20% of gross global product - \$12 trillion per year – spent on fixed capital projects worldwide (McKinsey, Quarterly, June 2008)
- 2006: 24.4 million project-oriented employees in projectized industries and 2016: 32.6 million (31% of them new employees since 2006). Equates to 1.2 Million jobs annually (Anderson Economic Group, 2006.)
- Project Manager is marked like key job in 21st century (Fortune Magazine, USA, 1999.)

Projects and GDP



The key future trends

- Change of priorities among sectors,
- “New” criteria : Society and environment
- Large projects and megaprojects,
- Even more global,.....
- Even more complex,.....
- A new areas for projects : megacity, emergency, environmental,
- Better, bigger, faster
-

Sectors and Projects in 21 st century

- » **Traditional priorities** – food, health, energy transport, communication, mining,.., will continue to generate many projects
- » **New priorities** – crisis, emergencies, environment, megacity, space, robotics, recycling / reusing , development, charity, education, tourism,, will generate more and more projects
- » Traditional approach in PM – **deliver**
- » New approach in PM – **result**

Challenges facing PM Professionals

- » Complexity increasing worldwide, working group environments more complex
- » Mega projects for mega cities
- » Projects on a global scale in multicultural contexts
- » Real (manufacturing/construction) vs virtual work
- » Critical need of behavioral skills
- » Growing number of mega-multinational Projects
- » Multi-cultural influence on project deliverables
- » Projects increasingly done for the good of society/environment

THE GLOBAL TRENDS IN CONSTRUCTION INDUSTRY

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The Global Trends in Construction

- **Specialization** - contracts and subcontracts are more likely to be awarded to companies with expertise in a particular specialty.
- **Joint Ventures** - As projects get bigger, on-time completion becomes more important to owners of construction firms. Costs for late completion, including penalties, rise disproportionately to actual construction costs.
- **Design-Build** - The technological sophistication of many projects and the increasing use of design-build contracts encourage the integration of engineering and construction companies.

The Global Trends in Construction

- **Consolidation** - The increased acquisition of smaller construction companies has left a handful of dominant players in the industry
- **Guaranteed Maximum Price Contracts** - Guaranteed maximum price contracts are increasingly popular.
- **Per-Project Staffing, Equipment Leases** - Rising costs and uncertain markets lead construction firms to acquire many resources on a per-project basis
- **Security in Building Design** - Security concerns are affecting building designs.

The Global Trends in Construction

- **Green Construction Growing** - can cost more but lenders offer mortgage incentives for energy-efficient homes
- **Materials** - moving more work from the field into the shop
- **Energy Efficiency** – reduced energy consumption due the use of the new technology
- **Permanent Modular Construction** – where aplicable, phasing by bridging today and tommorow
- **BIM** – new tools for integration and support
-

THE PROBLEM OF POOR PROJECT PERFORMANCE : GENERAL AND CONSTRUCTION RELATED

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Project performance - general

- There are so many reports about poor project performance:
- World Bank, Project Performance Report, 1996.
- Standish Group, Chaos Report, 2001.
- UK Office of Government Commerce Report,
-
- Standard & Poor's, Global PM Survey, 2012
- McKinsey Report, 2012.
- Gartner Survey, June 2012
- Independent Project Analyses, 2012.

Poor Project Performance - Reports

- Megaprojects are failing by around 65% (Merrow, Independent Project Analysis)
- 86% of projects fail to deliver against their budget, schedule, scope, quality and benefits baseline (PWC, December, 2012)
- 70% organizations have suffered at least one project failure in last year (KPMG)
- 35% organizations abandoned a major project in last 3 years (Lofica Mng Cons)



The problem of megaproject failure

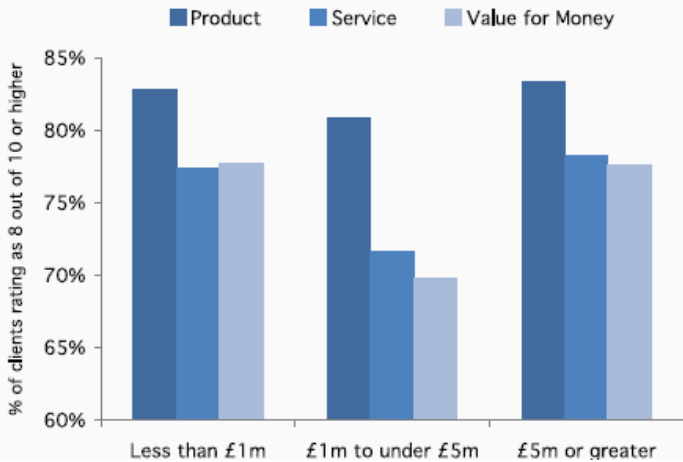
- When facts overcome fiction the consequences are huge cost overruns, delays, missing revenues, crippling debt, and, to add insult to injury often **also negative environmental and social impacts** (B. Flyvbjerg, Harvard Design Magazine, 2005.)
- **The problem of megaproject failure is not just personal or team failure or company failure but community and society failure**
- **Large projects not only fail more often they deliver less**

The Current State of Construction Industry (findings from UK, 2014.)

- The latest indicators suggest that the challenging economic environment is undermining the industry's efforts to deliver an improved product and service to clients
- profitability has slipped further (i.e. for UK to 2.1% down from 2.7%)
- Labour has been shed over the last five years
- clients' perception of value for money slipped to in the lowest level since 2008.
- there was a dip in satisfaction regarding client information provision, (BIM use raised from 4% of projects completed in 2012 and 9% in 2013.)

Construction Industry Key Performance Indicators (Glenigan, UK 2014)

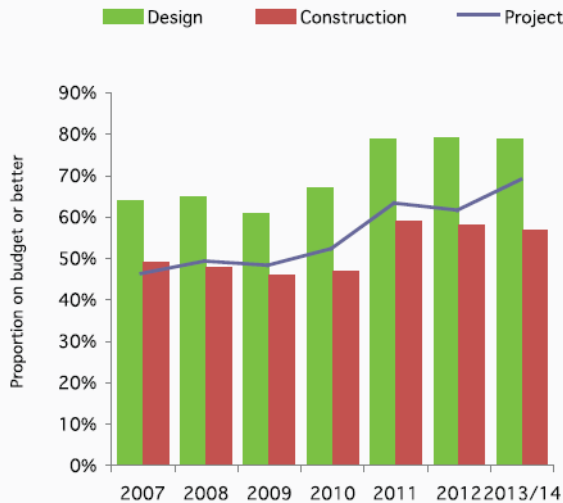
Client Satisfaction by Project Size, 2013/14



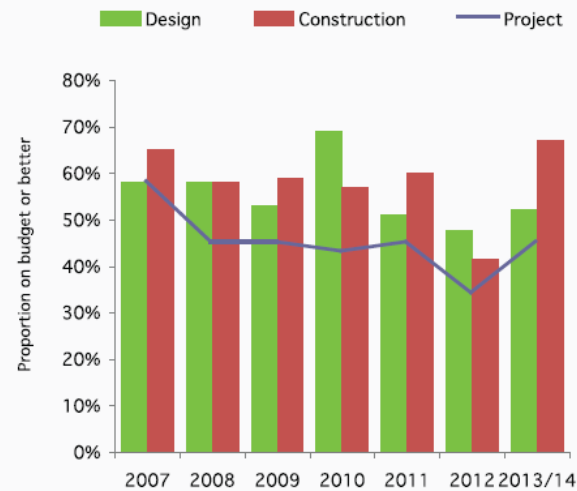
Profitability & Productivity



Cost Predictability



Time Predictability



Over 80% construction firms have under-performing projects (KPMG)

Over 80 per cent of construction companies are grappling with one or more under-performing projects in the country, says global consultancy firm KPMG.

Citing the reasons for the poor performance of projects, it said, "**Poor contractor performance and project delays have been identified as the two prime causes for the under-performance.**"

According to the report, the under-performing projects have significantly impacted the organisations in terms of cost, delay, regulatory compliance or reputation.

The report further said that there is also a huge trust gap between owners and contractors, adding, "**with only about 18 per cent owners claiming to have a 'high level of trust' in their contractors.**", <http://www.rediff.com/business/report/over-80-construction-firms-have-under-performing-projects-kpmg/20150415.htm>

KPMG 2015 Global construction Project owner's survey

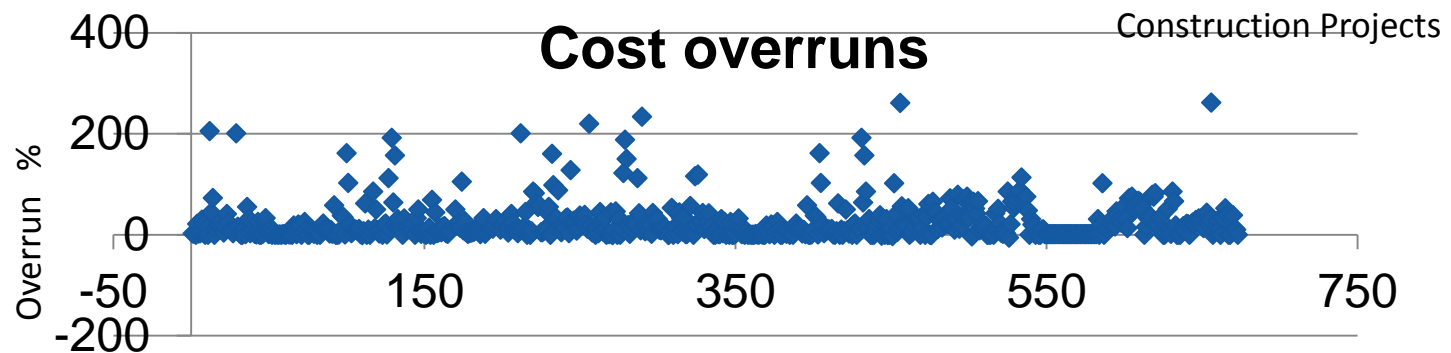
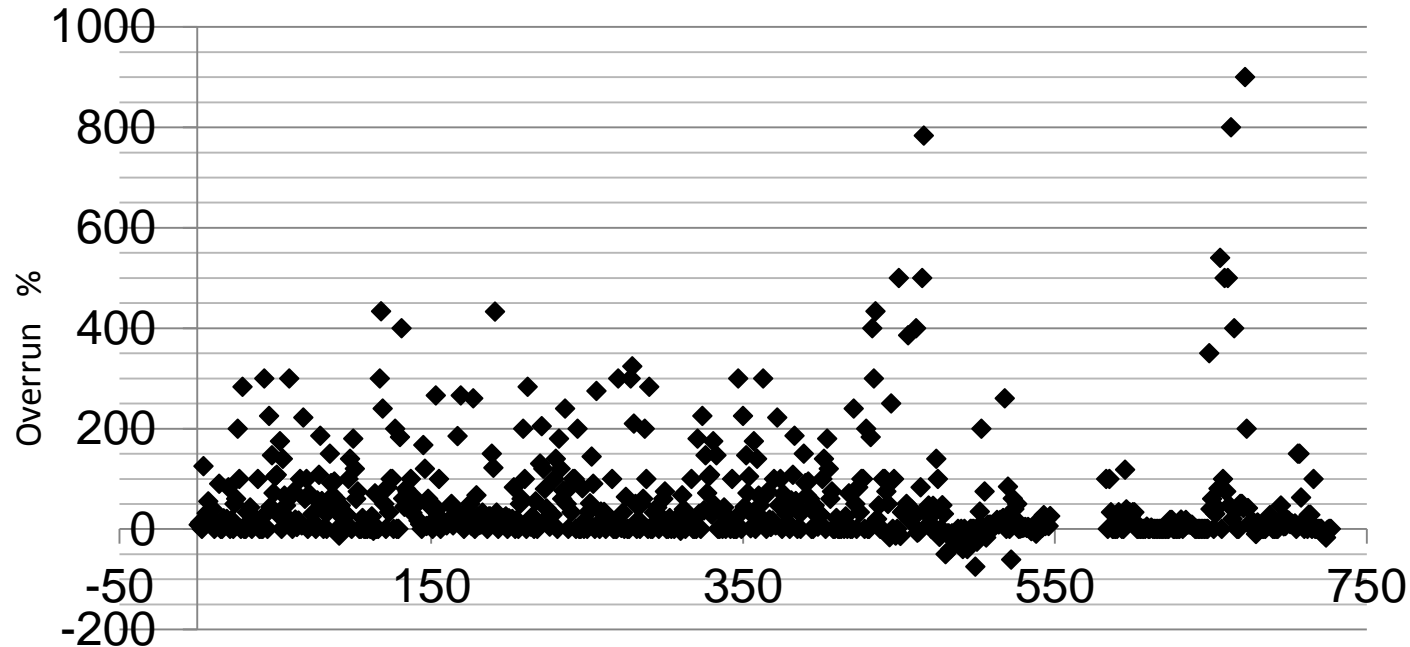
- **Maturity in preparation**
 - **planning and prioritizing appear to be rigorous** (70-80% contract strategy, risk analyse, planning,...)
 - **talent shortages remain a challenge** (around 45% struggle to attract labor, planners and managers)
- **Maturity in risk, controls and governance**
 - **owners express confidence in their project controls** (55-75% happy about control system, accuracy, ...)
 - **Project management information systems (PMIS) not yet ubiquitous** (50% use PMIS, but 2/3 not integrated with accounting and procureent,..)

Cont.

- **Maturity in performance**
 - **owners continue to experience project failures** (only 25% / 30 % projects came on time / budget in the past 3 years)
 - **a mixed approach to contingency planning**
- **Maturity in relationships**
 - **the push towards contractor collaboration may need more impetus** (only 1/3 clients have high trust in their contractors)
 - **contracts continue to emphasize the divide between contractors and owners** (58% are lump sum (fixed price) contracts)

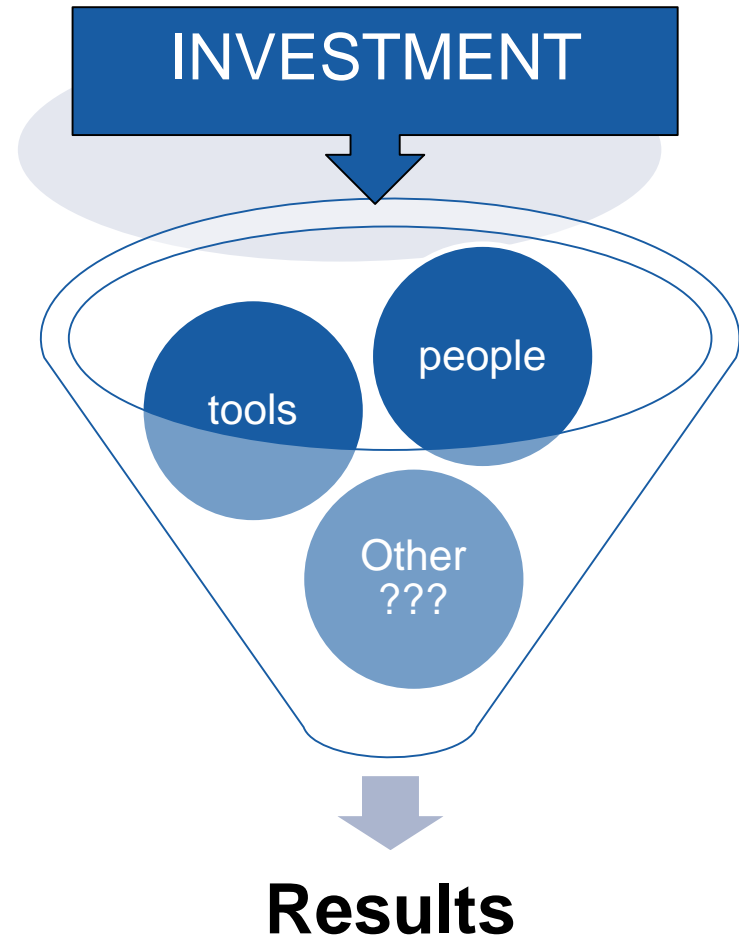
727 Construction Projects Performance

Time overruns



Investment in Project Management

- 55% are 'satisfied' or 'mostly satisfied' with their investment in project management
- And what does it mean investement in project management ???



Project Management in Construction

The management of construction projects requires knowledge of modern management as well as an understanding of the design and construction process. Construction projects have a specific set of objectives and constraints such as a required time frame for completion

“Developing effective and appropriate tools for project management career development is fundamental to the Engineering Construction industry. Project Managers (PM) play a key role in delivering organizational projects and initiatives. Identifying the appropriate PM competencies for your organization is therefore crucial in ensuring continuing success”



**Workshop on
Project Management Competency Framework
- benefits, implementation and management
Mon 19 Nov 2012, London**



THE TIPS FOR IMPROVING CONSTRUCTION PERFORMANCE LEVERAGING FROM PROJECT MANAGEMENT

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What is project management and what can it provide to construction ?

- Google search - about 260.000.000 results
- Dealing with :
 - Delivery, results, benefits,.....
 - Standards, methods, tools,...
 - People, stakeholders,
 - Competence, capacity,
 - Context, business, organizations,
 -

Delivery, results, benefits,...

The construction managers are mostly oriented towards technical details and activities which should be executed.

By learning from PM they can move focus to results and benefits. This is more advanced focus.

Decision for Success or Failure

- five key decisions that lead to failure

(Results from survey on more than 300 construction projects)

Clients	Contractor groups	Project managers
<ul style="list-style-type: none">■ isolation of project objectives from overall business policies■ lack of support from stakeholders■ lack of clear project scope■ no life cycle criteria■ lack of risk analysis <p style="text-align: center;">↑</p> <p style="text-align: center;">Oriented to project success</p>	<ul style="list-style-type: none">■ precarious optimism■ poor planning■ inadequate communication■ underestimation of fragmentation■ lack of procedures for changes <p style="text-align: center;">↑</p> <p style="text-align: center;">Oriented to project execution phase success</p>	<ul style="list-style-type: none">■ client insist on project realization without adequate documentation■ late changes in project scope■ unrealistic goals■ lack of pm competences■ contract award dominantly based on bid price <p style="text-align: center;">↑</p> <p style="text-align: center;">Oriented to project management success</p>

Why large projects fail ?

- **Missing element** : vision, alliance, government, approval, management, ...
- **Missing 3D approval approach** :
Business – Community – Environment
 - Underestimated costs and Overestimated revenues (B),
 - Overvalued development effects, (C)
 - Underestimated environmental impacts (E).
- **Misbalanced stakeholder approach** :
Balance of project pushing and controlling processes

Standards, methods, tools,...

Construction is very traditional sector. It accepts new technologies and techics rather promptly, but organizational changes and management innovation are not accepted in the same manner.

PM today has variate of very powerfull sets of standards, methods and tools which can move construction business to better results

IPMA Standards

- The PM standards for individuals, organizations and projects
- Standards which facilitate competence in **Project Excellence**

**Organizational
Competence**



**Module O
(Organisation)**
PM competence of the organisations management using a multi-dimensional questionnaire



**Module I
(Individuals)**
PM competence of selected project managers, team members and stakeholders using ICB 3.0

**Module P
(Projects)**
PM competence and results in selected projects or programmes using Project Excellence Model

**Project
Excellence**

PROJECT EXCELLENCE						1,000		
Project management			500	Project results			500	
Project objectives				140	Results			180
Processes	140	Leadership	80	Client satisfaction	180	Employees satisfaction	80	
Resources	70	Employees	70	Satisfaction of other interested parties			60	
Innovation and learning								

**Individual
Competence**

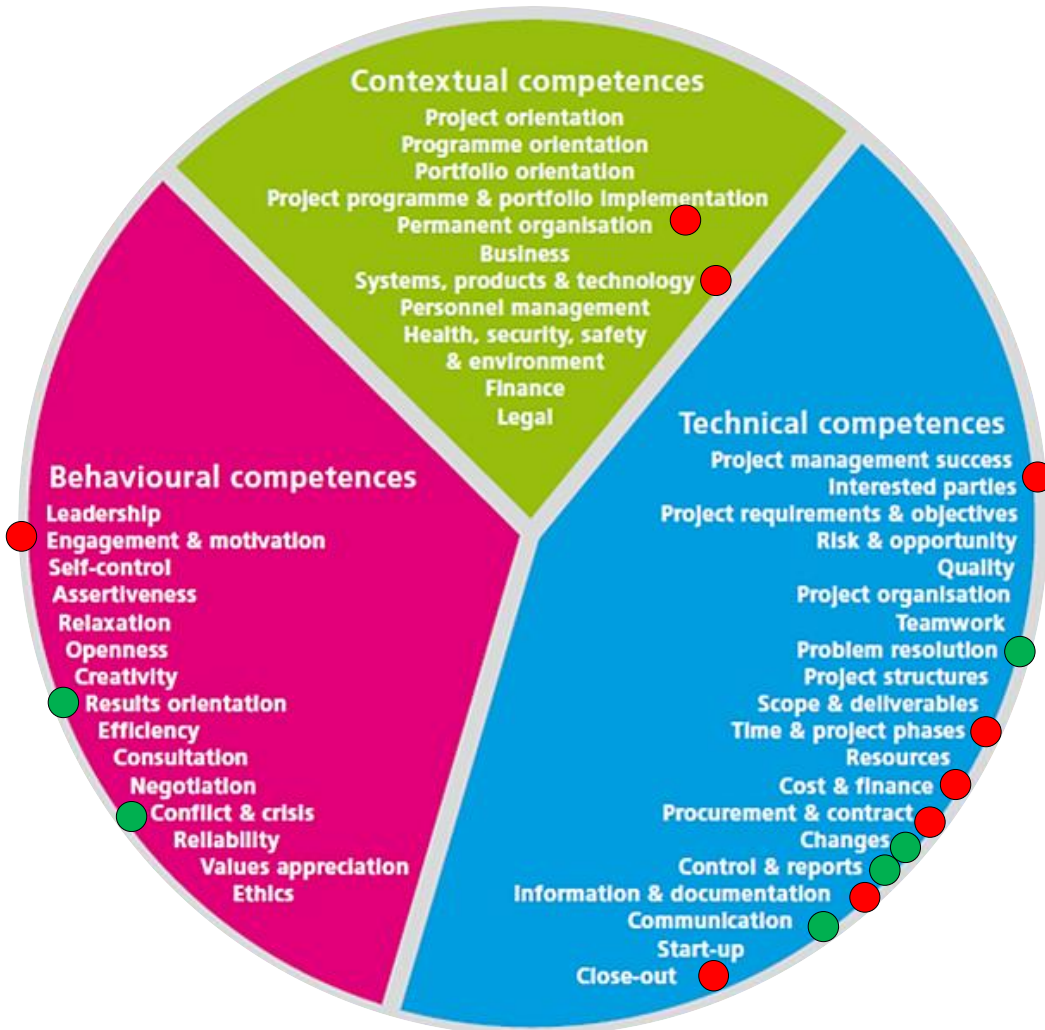
The PM standards' influence to construction sector

- A platform for **IMPROVING MATURITY IN PERFORMANCE** (costs and time overruns!!)
- More transparent processes **IMPROVING MATURITY IN PREPARATION** (less delays and losses for contractors)
- Facilitation of the contractor's understanding of client needs and overall roles and responsibilities **IMPROVING MATURITY IN RELATIONSHIP** (focusing results and objectives)

The PM standards' influence to construction sector

- **Improved quality of documentation MATURITY IN RISK, CONTROLS AND GOVERNANCE (lessons learned)**
- **Better communication client-contractor IMPROVING MATURITY IN RELATIONSHIP (less claims !!!)**
- **Provides a better platform for external stakeholders and local communities to understand project**
- **The use of PM standards do not limit the creativity, because it should be flexible and tailored approach**

BIM and PM



Competences acquiring more importance, in a high way are:

- 64% technical
- 24% behavioural
- 12% contextual

Competences better supported, in a high way are:

- 66% technical
- 33% behavioural
- 0% contextual

IPMA Competence Baseline, version 3.0

People, stakeholders, ...

People are critical factor in each project.
There are variety of levels how people act in a project and influence it.

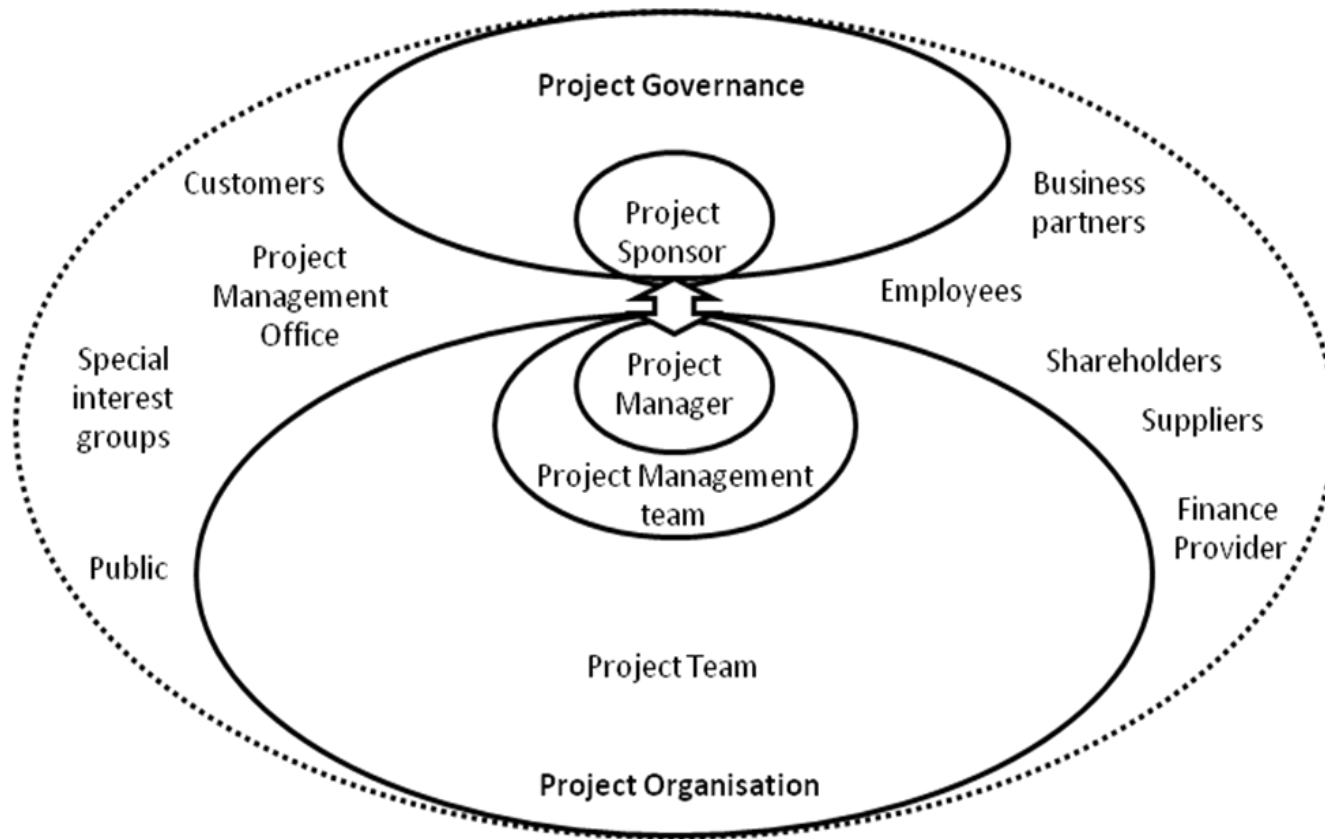
Construction is primarily focused to own staff and workers on a site, and do not practice comprehensive analyses of people levels.

PM is confirming that engaging and organizing competent people is critical for project result

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People and organization in project (from ISO 21500)



Aspirational and / or Accidental PM !?

- Finding suitably qualified project managers is becoming increasingly difficult. There are two categories of project managers:
- **Aspirational** – those that want to be project managers, and studied PM at University as a core degree.
- **Accidental** – those that fell into PM from other traditional professions and don't hold higher degrees in PM, but have learnt by trial

(<http://strikingprojectmanagement.com/project-management-prediction-2013/#sthash.o5c7pMJ5.dpuf>)

THE NEED :The five most in-demand creative jobs

Project Manager - **key job** in 21st century
(Fortune Magazine, USA, 1999.)

1. Design and user experience
2. Frontend development
3. Content development
4. Project management !!!!!!!!

(<http://www.careerbuilder.com/Article/CB-3250-Job-Info-Trends-The-5-most-in-demand-creative-jobs/> December, 2012.)

Forbes -The 10 Skills That Will Get You Hired In 2013es (Tips for education)

1. Critical thinking 9 / 10
2. Complex problem solving 9 / 10
3. Judgment and decision making 9 / 10
4. Active listening and understanding 9 / 10



.....

8. Monitoring and assessing performance 5 / 10

.....

<http://www.forbes.com/sites/meghancasserly/2012/12/10/the-10-skills-that-will-get-you-a-job-in-2013>

Competence, capacity,...

Competence is foundation for each business success.

Construction do not practice approach to competence by recognizing it as high priority or strategic activity.

By learning from PM, construction can change approach and invest more in competence development across company

Investment in Project management Competence Development

Project Life Cycle

Opportunity

- Identify and assess sustainability issues
- Identify alternatives to manage issues
- Engage key stakeholders

Proposal

- Understand customer sustainability goals, objectives, and priorities
- Identify sustainability activities
- Engage key stakeholders

Award

- Identify and agree on sustainability objectives
- Engage key stakeholders

Design

- Assess potential changes in sustainability issues
- Identify sustainability programs
- Engage key stakeholders

Construction

- Engage key stakeholders
- Engage subcontractors on sustainability expectations

Handover

- Transfer positive legacy to customer
- Conduct performance feedback and continuous improvement process

PM COMPETENCE

PROJECT MANAGEMENT

skills

experience

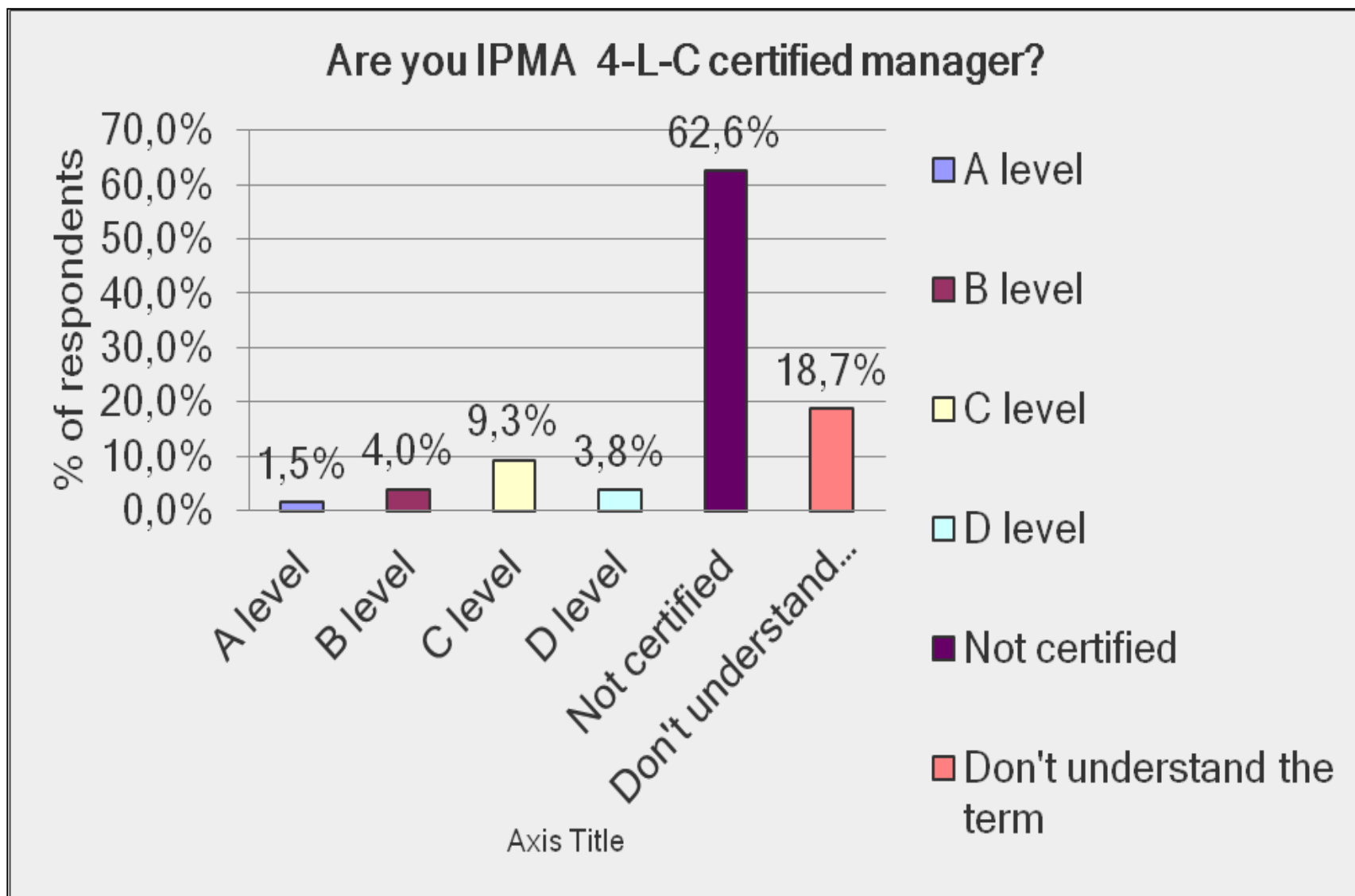
knowledge

attitude

standards

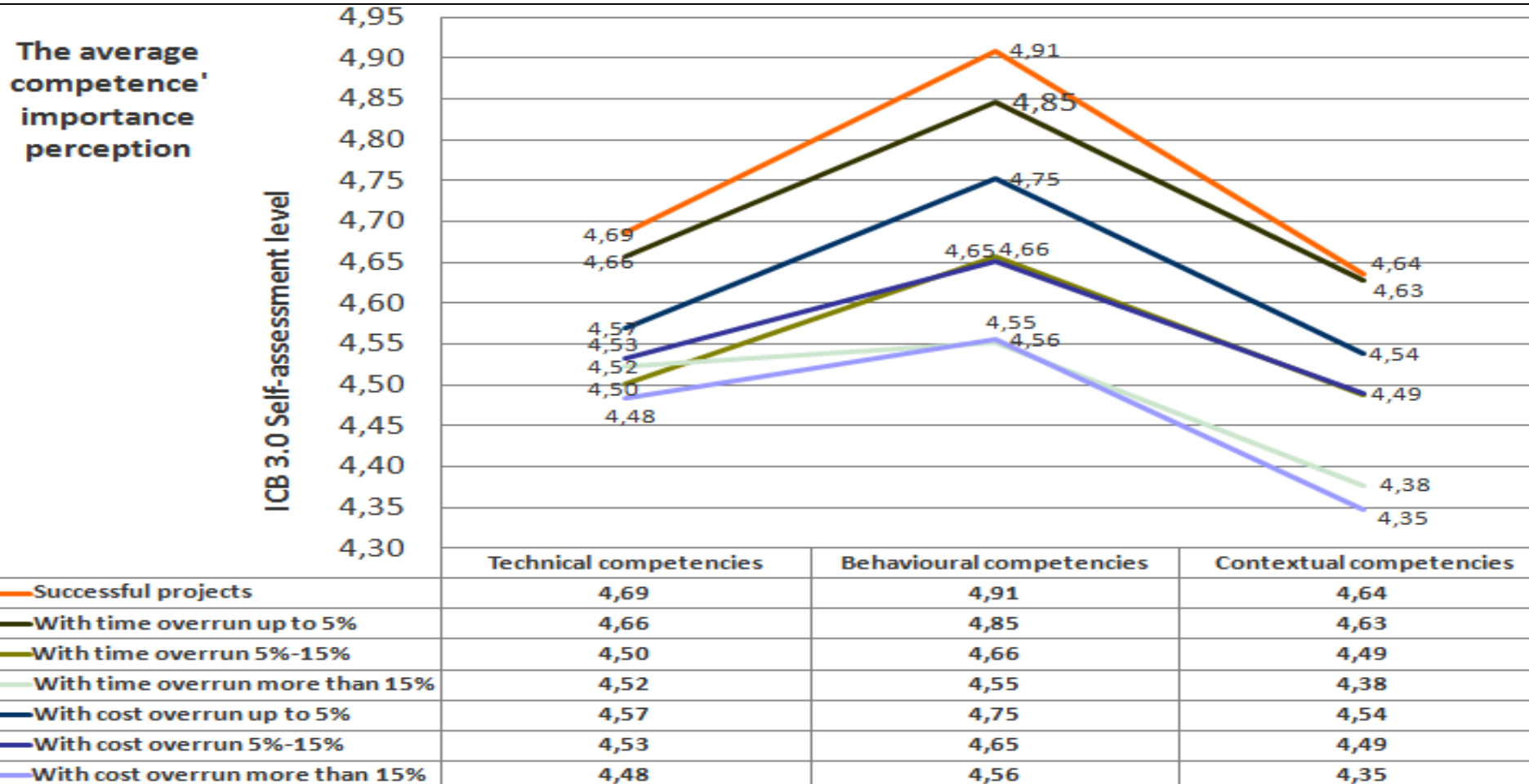
best practices

The survey within construction sector



The competencies vs. project performance

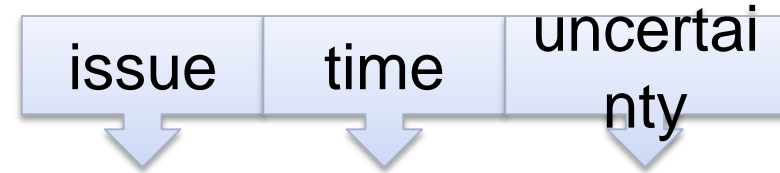
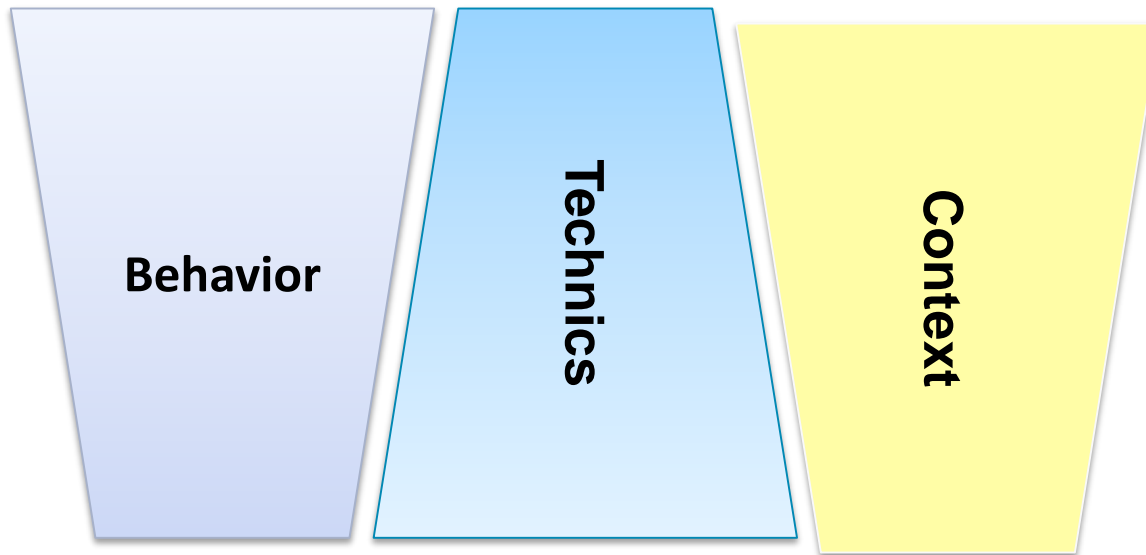
(MSc Maja Marija Nahod, Prof Mladen Radujkovic, Doc Mladen Vukomanovic, 2013.)



The Competence

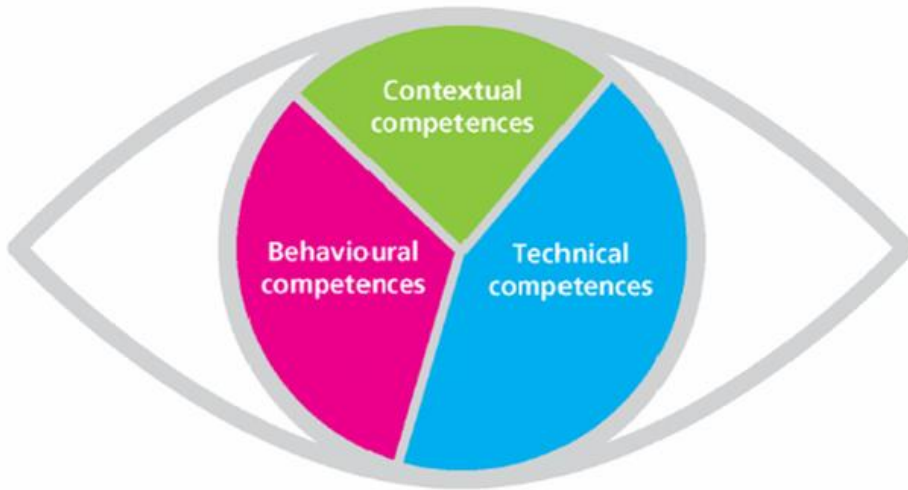
The next level of challenges / or senior positions ?

What happens if we go further ?

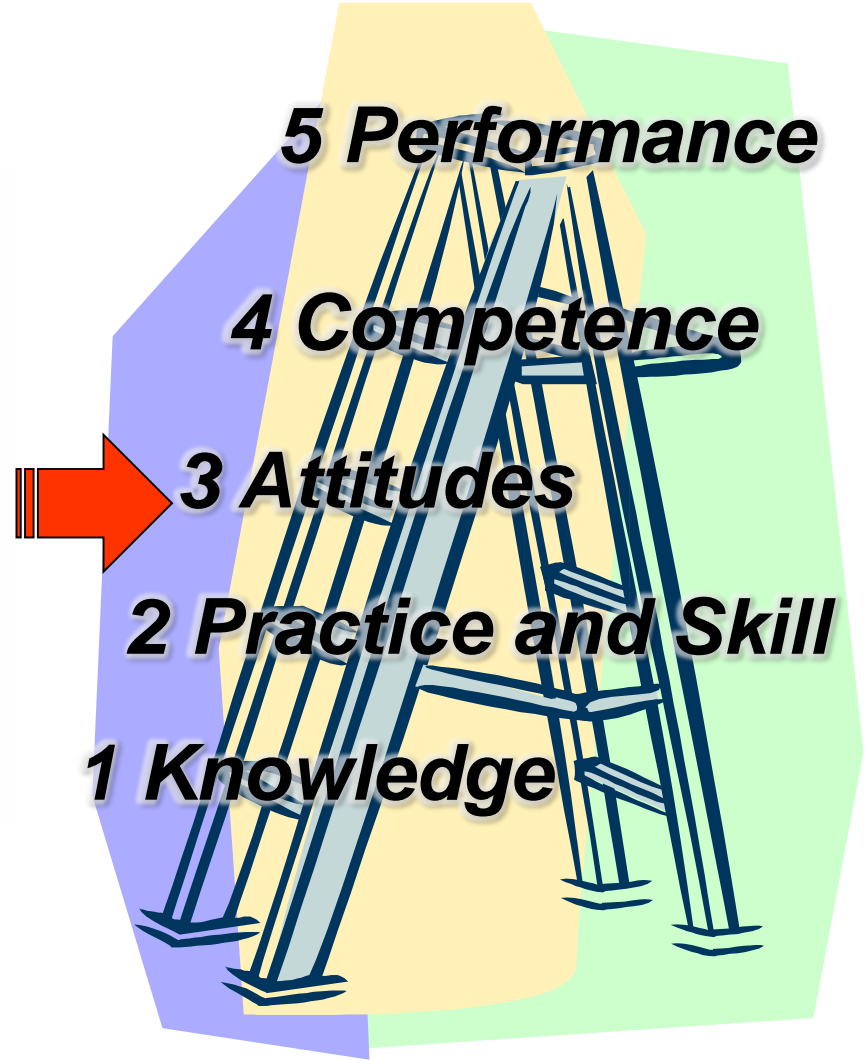


creative	short	high
complex	normal	medium
regular	long	low

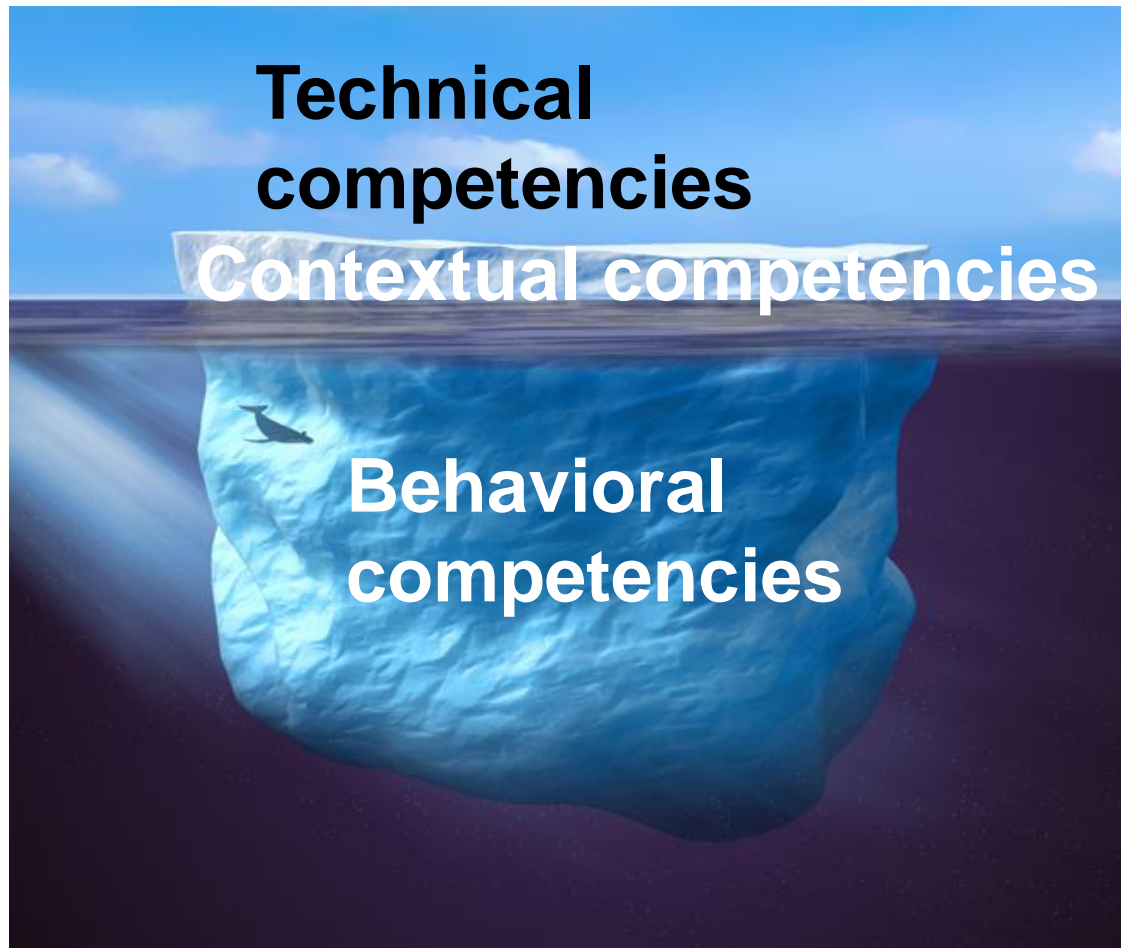
The IPMA competence model



The Eye of Competence



The Visibility of the Competences



Context, business,...

Construction is very much self-oriented sector. The fragmentation is present across all levels of construction business.

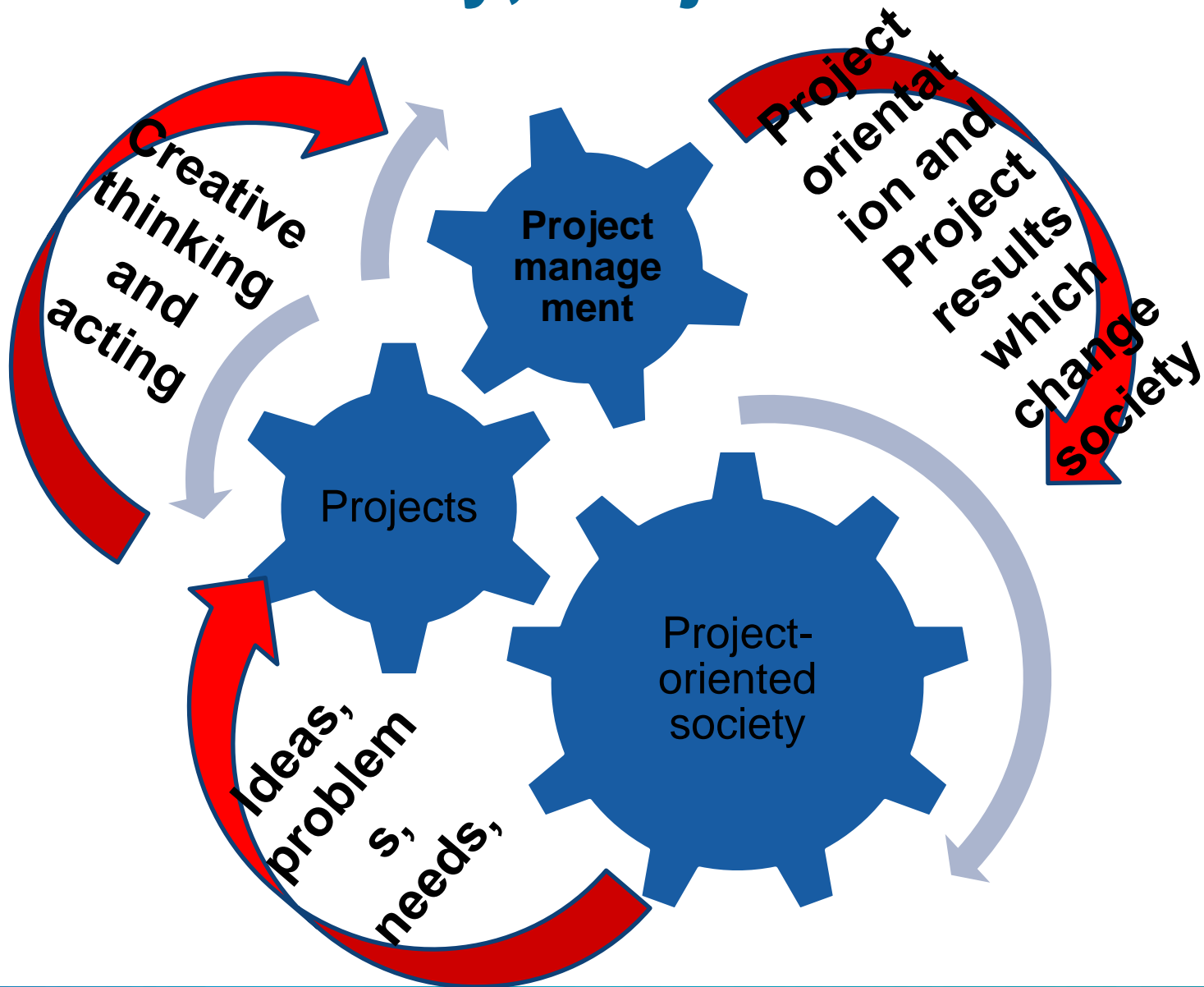
There is urgent need that construction experts learn more about all stakeholders, so as understand client and society needs.

PM already proved that isolation and fragmentation cause a number of problems in each business, so there are approaches how to overcome that.

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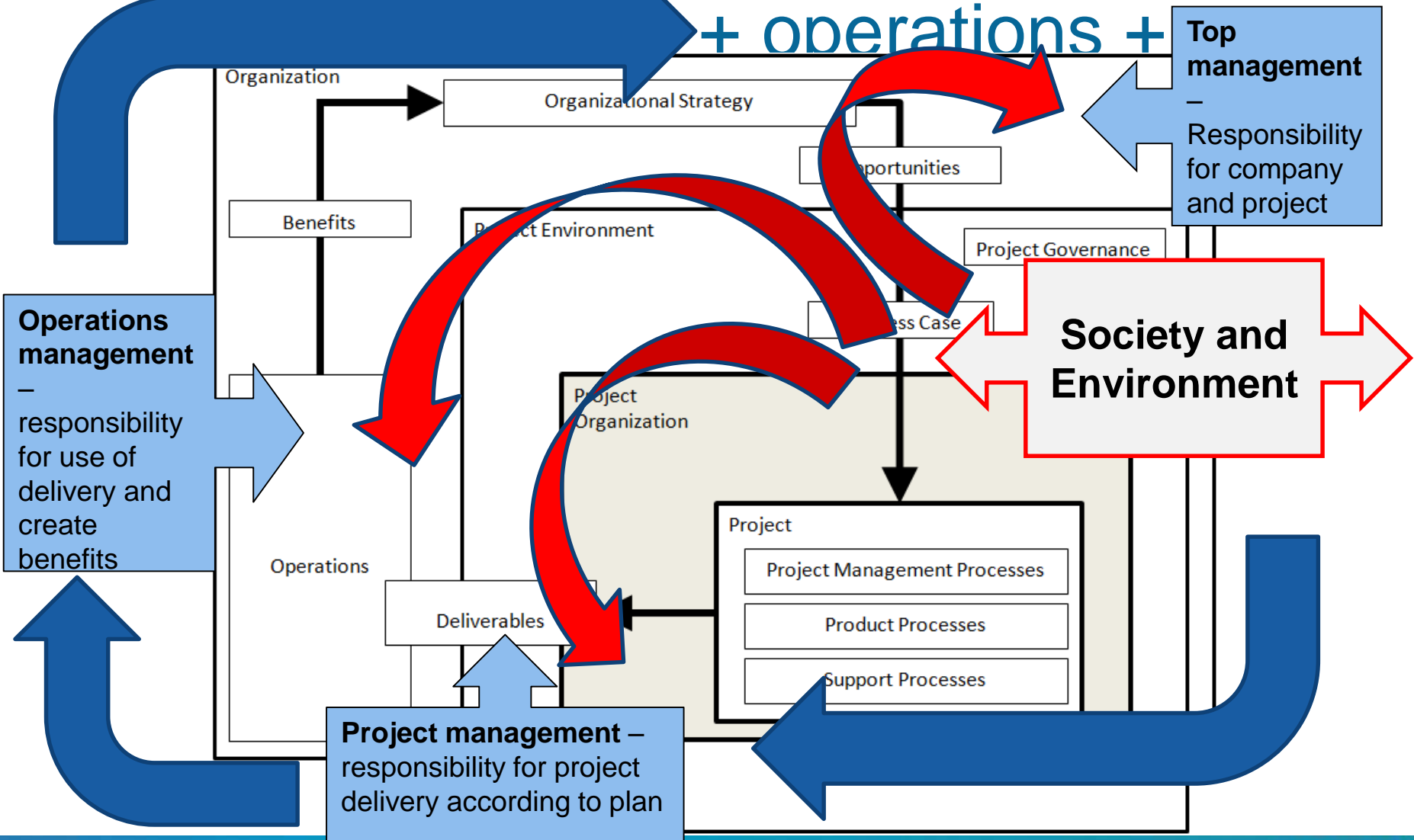
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Society, Projects and PM



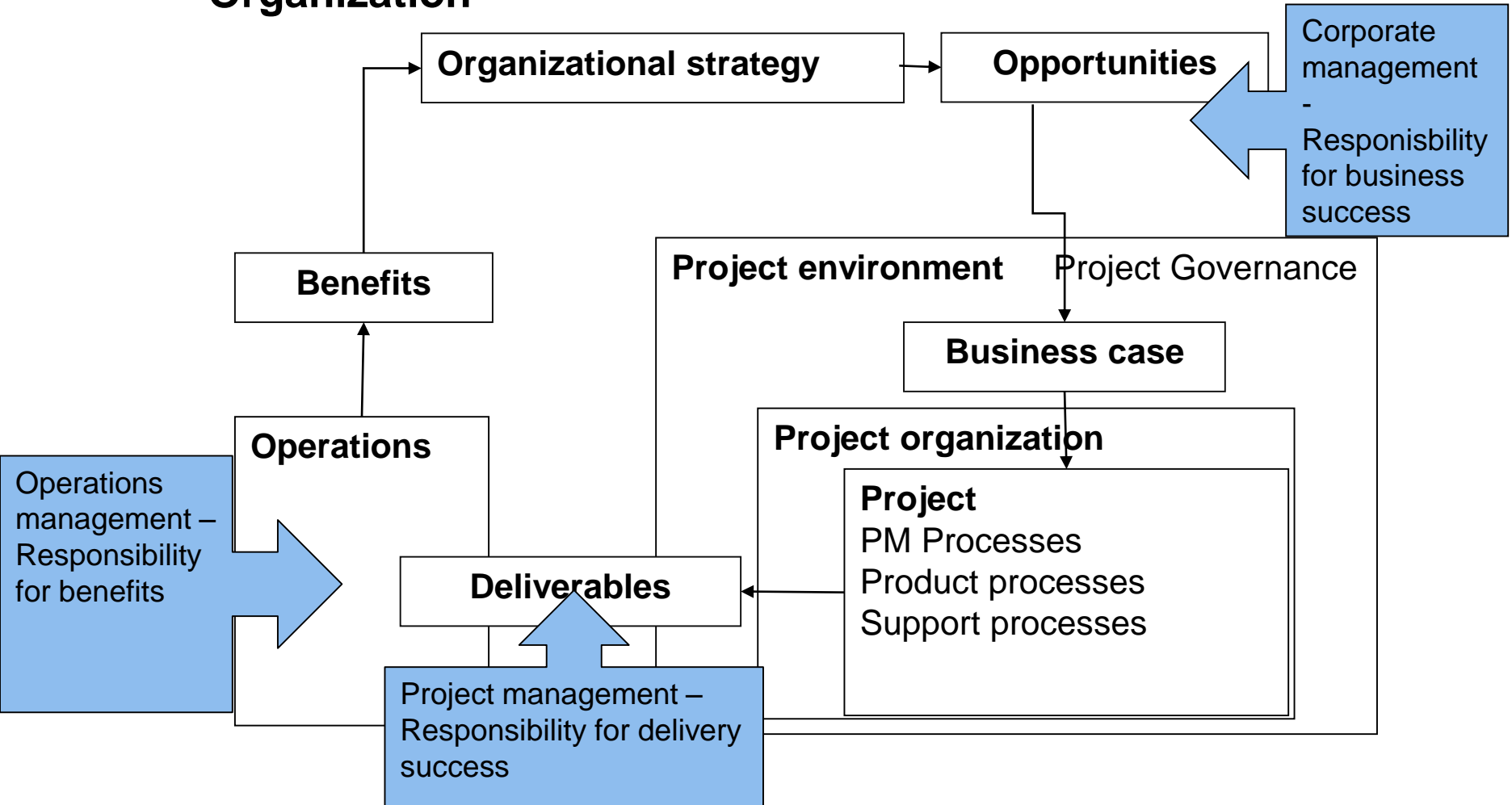
PM and success : *Integrated* :

+ operations +



ISO21500 project management concepts and their relationships

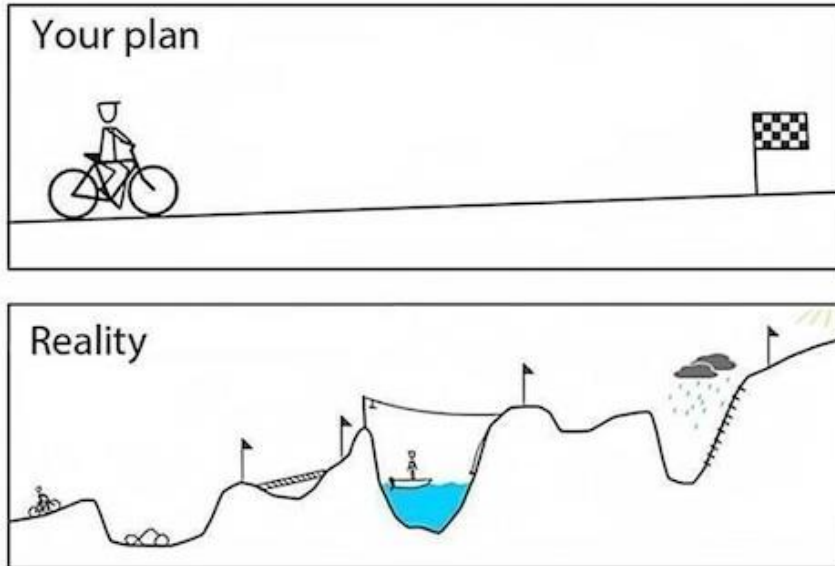
Organization



CONCLUSIONS

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Conclusions



**Project
Management can
lead construction
towards much
better results ,
under its uncertain
way**

Questions ?

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