



Lean Construction Professional's Profile (LCPP): Understanding the Competences of a Lean Construction Professional

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Introduction

- Most implementations of Lean Construction have been very fragmented (Pichi & Granja, 2004; Alarcón et al, 2006)
- Chilean case: main problems have been related to cultural, organizational and human issues
- Organization development program, including:
 - □ Review of Project Managers (PM) role
 - Develop a training program for their professional staff to become a "lean organization"



Research objectives

Propose a way to support lean construction in contractor organizations (people perspective)

Create a Lean Construction Professional Profile (LCPP)

Expand the focus centered in projects toward a holistic vision of the implementation, that will include:

Culture
Organization
People



Background: why do research on people issues?

		Implementation scenarios (Picchi & Granja, 2004)			
		Scenario 1 Fragmented tools applications	Scenario 2 Integrated job site application	Scenario 3 Lean enterprise application	
Implementation Phases (Seguel, 2004)	Phase A University team responsibility	Company 2			
	Phase B Shared implementation responsibility	Company 1Company 3Company 4			
	Phase C Company responsibility	Company 5Company 6		Ideal state	

Companies need to evolve from "Scenario 1" to "Scenario 3", but for doing so they need to generate capabilities to support this change.



Research methodology

Analysis of a theoretical framework (executives roles)

Analysis of Chilean construction project managers' job

(executives roles)

Elaboration of a preliminary LCPP

Expert panel for judging the preliminary LCPP

Consolidation
Of the LCPP

- Management science approach
- Construction industry approach
- LeanConstructionapproach

- Skills needed by effective PMs
- PM time use

- Definition of areas of competence
- Definition of a preliminary LCPP
- Presentation of the LCPP on the 14th IGLC
- Application of a questionnaire to lean experts
- Analysis of the results of questionnaire
- Consolidation of the LCPP

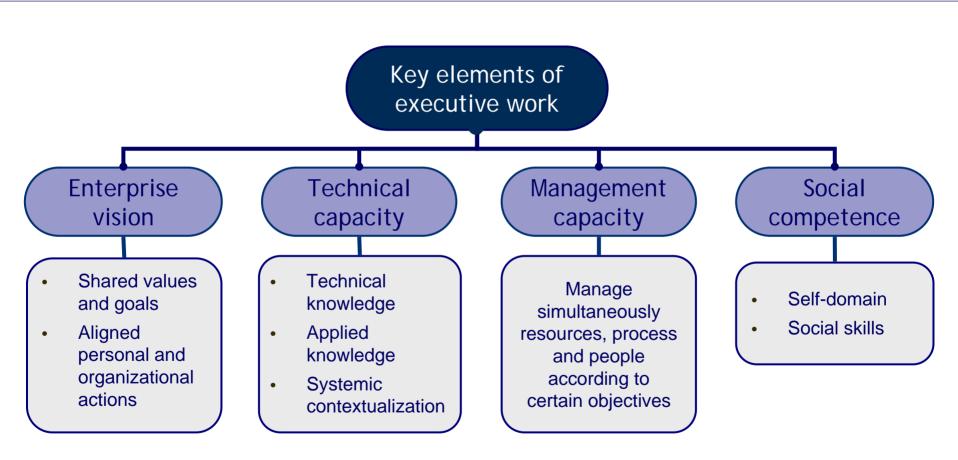


Step 1: Analysis of a theoretical framework

Executive functions (Mintzberg, 2005) The effective executive (Drucker, 2004) Administration and leadership (Covey, 2005; Kotter, 1990) Management science approach Lider level 5 (Collins, 2001) Emotional intelligence on leadership (Goleman, 2004) Personal integrity on leadership (Covey, 2005) Skills needed to be an effective project manager (Odusami, 2002) Construction industry Competences for a high performance project manager (Dainty et al., 2005) approach Project manager competences development (Edum-Fotwe & McCaffer, 2000) Lean leadership (Orr, 2005; Howell et al., 2004) Lean construction approach Managerial competences to introduce innovations in construction (Lantelme, 2004)



Step 1: Analysis of a theoretical framework



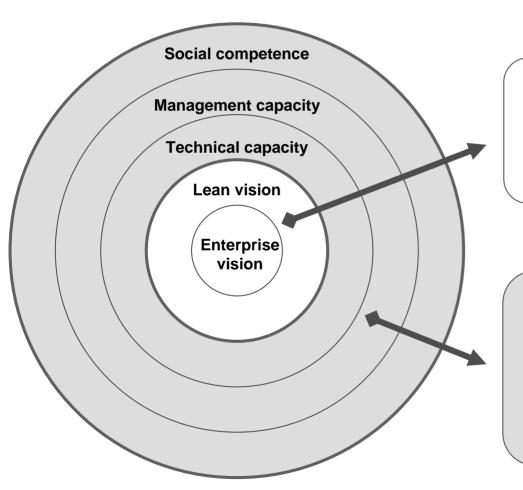


Step 2, Empirical analysis: Chilean construction project managers job

Empirical evidence from Chilean reality	Enterprise vision	Technical capacity	Management capacity	Social competence
Skills needed to be an effective PM (Pavez, 2007)		✓	✓	✓
PM's time use (Alarcón & Pavez, 2006)		✓	✓	✓

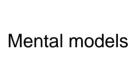


Step 3, Elaboration of a preliminary LCPP



Mental models and behaviors that must drive people acting in the organization

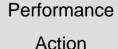
Generic competences



Behaviors

Competences and capacities people have to develop and/or apply at work to reach high performance

Specific competences







Step 4, Expert panel for the preliminary LCPP

- Regarding the preliminary LCPP, a formal questionnaire was sent by e-mail to analyze three issues:
 - The importance of the competence areas for a lean professional
 - 2. The adequateness of the competence areas proposed
 - 3. The definition of specific competences associated to each competence area

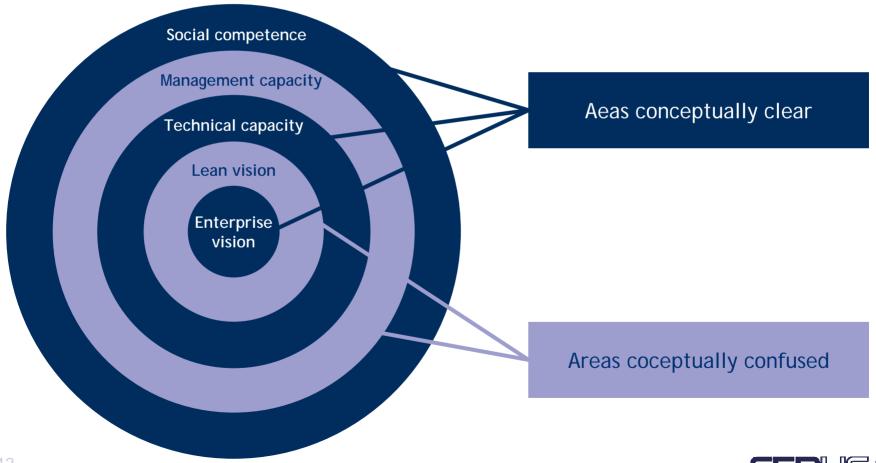


Step 4, Expert panel for the preliminary LCPP

Expert	Country	Experience in construction	Academic experience	Experience in lean construction
Expert 1	Brazil	20	28	10
Expert 2	Brazil	24	20	9
Expert 3	USA	11	19	11
Expert 4	USA	40	20	20
Expert 5	Brazil	30	22	10
Expert 6	Israel	8	9	6

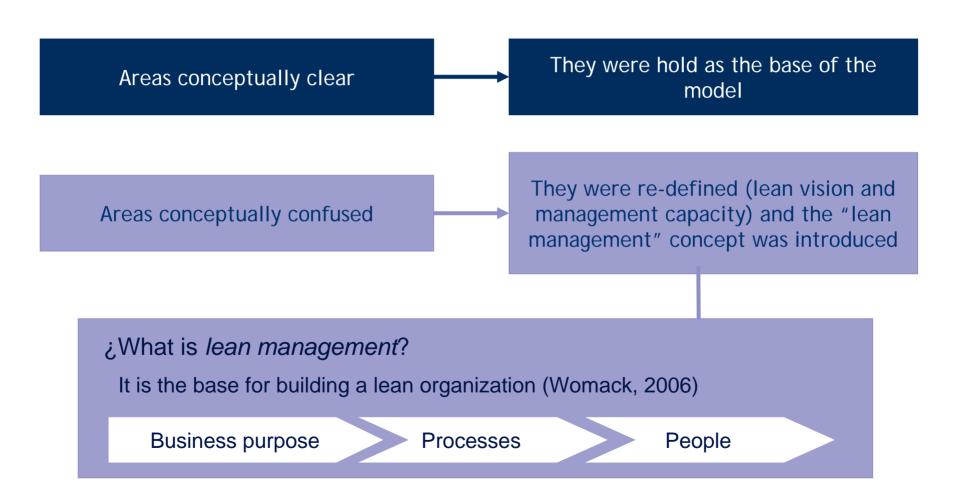
Step 4, Expert panel for the preliminary LCPP

Brief of the lean experts opinion...



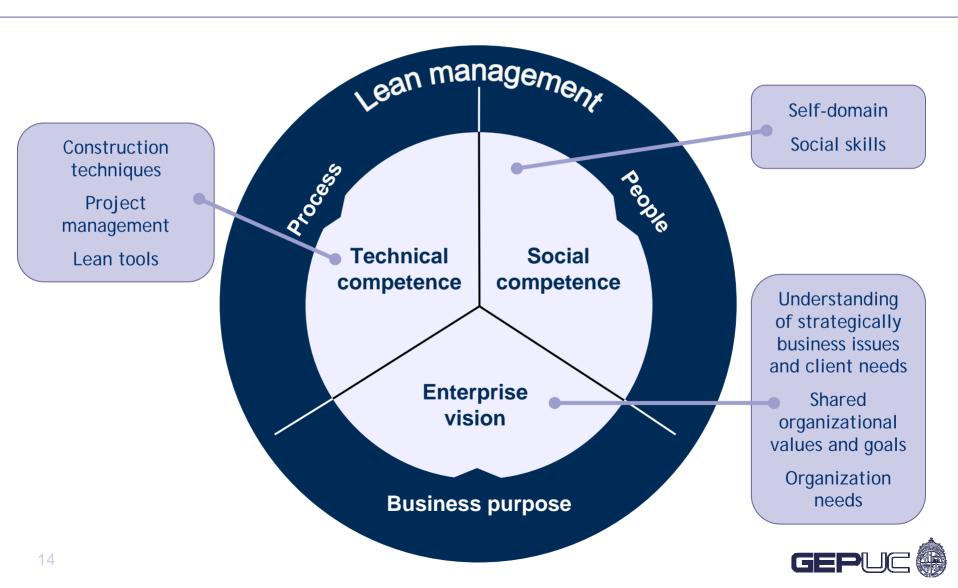


Step 5, Consolidation of the definitive LCPP





Lean Construction Professional's Profile (LCPP)



Conclusions

- This research investigated the way in which people could support the transformation of the lean organization by defining the LCPP
- The LCPP provide the competence areas needed by a lean construction professional (change agent) consistent with the elements of "lean management"; which is defined as a new understanding of how to be a lean organization (Womack, 2006)
- The conceptualization of the LCPP provides a good framework to drive people development inside construction companies, because it presents a complete model of the competence areas needed by lean professionals and a clear definition of the focus that each competence area must have



Recommendations for future research

- Identify specific competences for each competence area
- Study the differences among professional's positions by each competence area
- Define the most important competences in each competence area regarding the better way to support lean construction in contractor organizations
- Design training programs to develop each competence area in the professional staff of the companies







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