FACULTAD DE CIENCIAS FISICAS Y MATEMATICAS
UNIVERSIDAD DE CHILE

2030 | A New Engineering for 2030 FCFM - UChile

Educating Engineers at Beauchef campus

Felipe Alvarez

Vice Dean, FCFM UChile
March 17th, 2016

Manquehue Hotel, Santiago, CL

Proyecto apoyado por CORFO
Gobierno de Chile

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Vision

Engineering School
Science, Technology and Innovation

Open Multidisciplinary Approach

Outstanding Educational Experience

Relevant and High Quality Research

Strong Engagement with Society

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Active learning and design thinking

Outstanding Educational Experience

Example:

Introduction to Engineering Lab

Student-centered interaction

Outstanding Educational Experience

Example:

Galileo Lab for Learning Physics & Computational Tools

Common core (first two years)

Integrated learning experiences

Outstanding Educational Experience

Sports programs and clubs

Outstanding Educational Experience

Catalyzing challenges

Outstanding Educational Experience

Examples:

- **Solar car competitions**
- **Miniaturized satellite (CubeSat)**

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Student mobility: exchange and study abroad

Outstanding Educational Experience

- International Internship for Engineers: Singapur, Indonesia, Silicon Valley.
- Dual degree with the Écoles Centrales, France.
- Summer School @Beihang University

École Centrale de Pékin

Skills to solve the Engineering Grand Challenges of the 21st century

1. Practical experience
2. Up-to-date knowledge
3. Knowledge of fundamentals (e.g., calculus)
4. Knowledge of theory
5. Knowledge of multiple engineering disciplines
6. Understanding of non-engineering disciplines
7. Creativity
8. Ability to take risks
9. Technical prowess
10. Technical intuition
11. Responsibility and ethics
12. Effective communicator
13. Ability to apply digital technologies
14. Multi-cultural sensitivity
15. Ability to work in a team

Source: 2015 SPEED Global Survey

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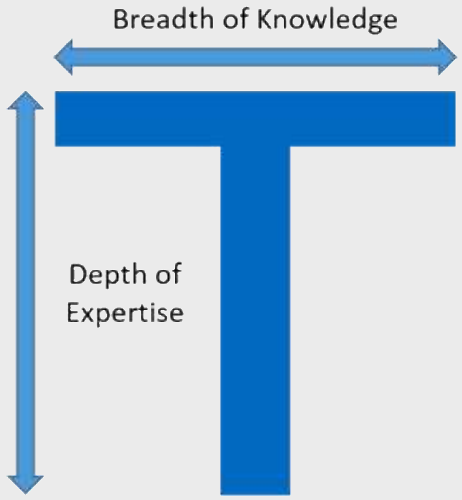
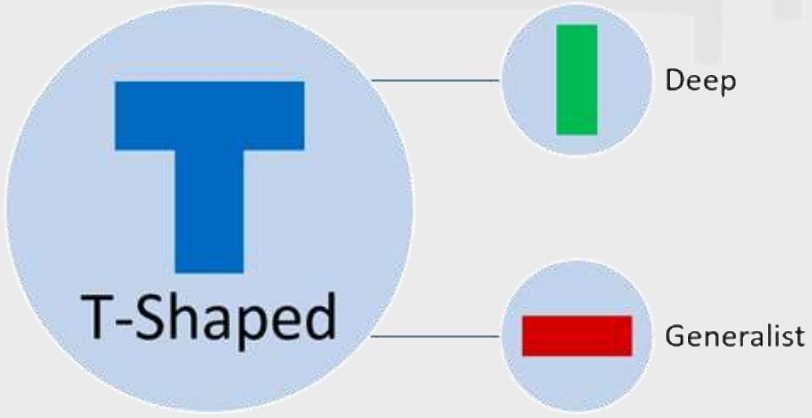
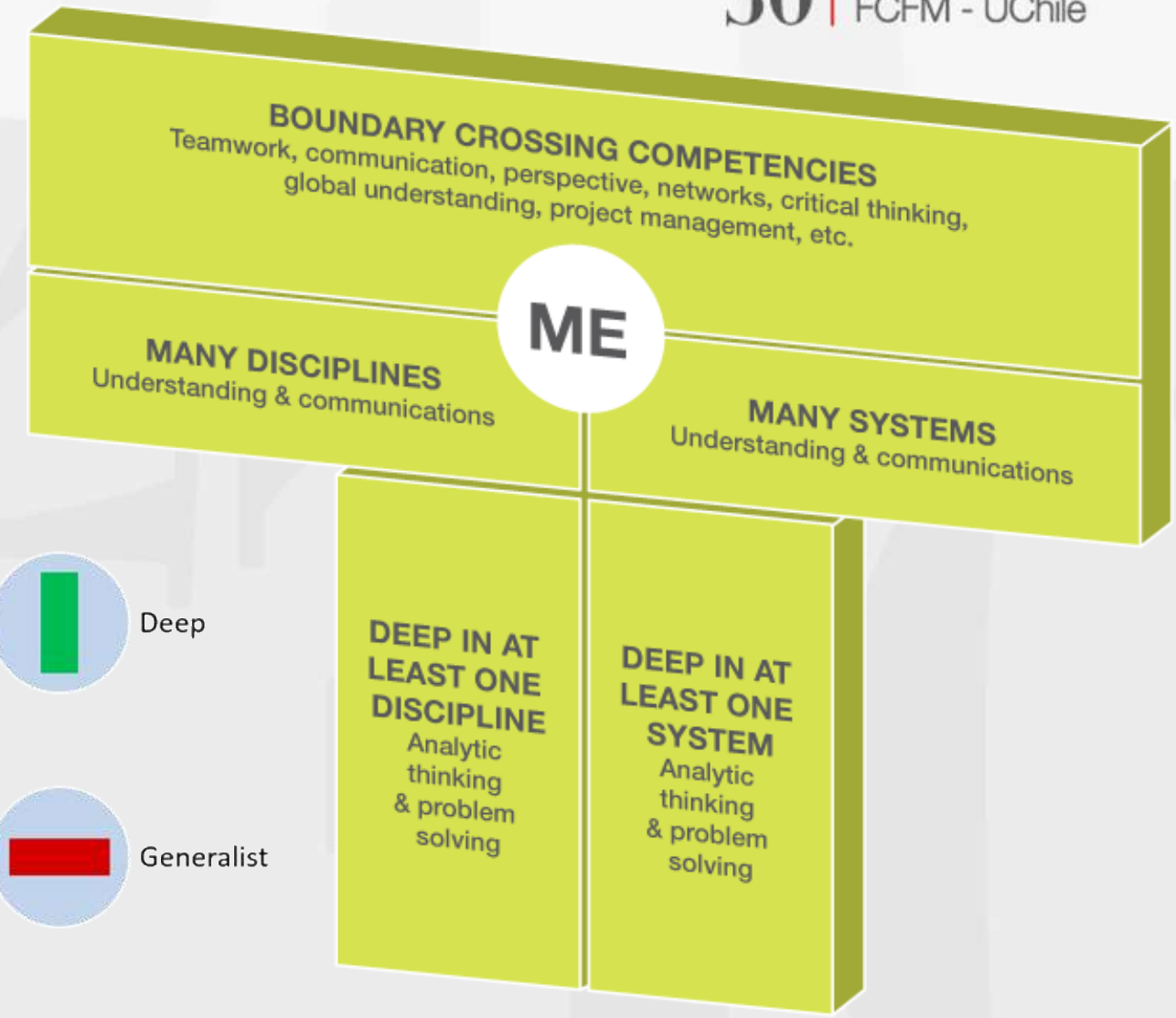
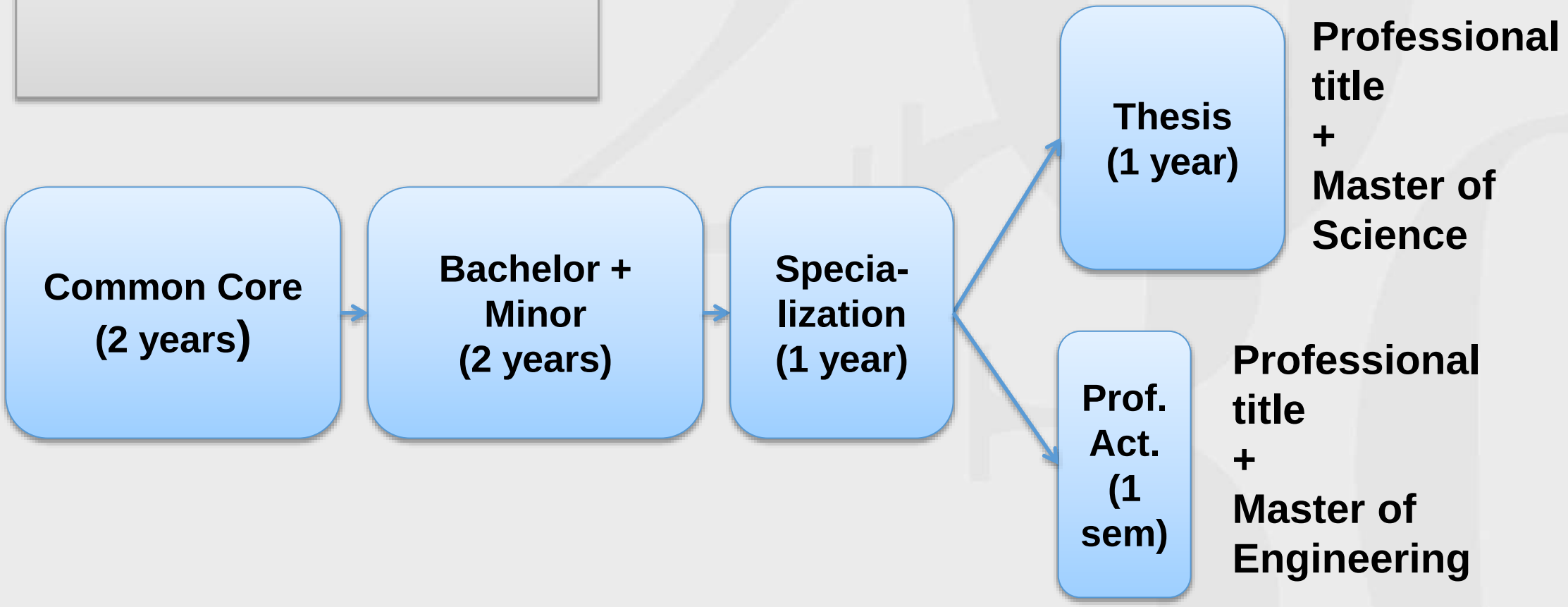
T-Shaped Engineers







Tentative model



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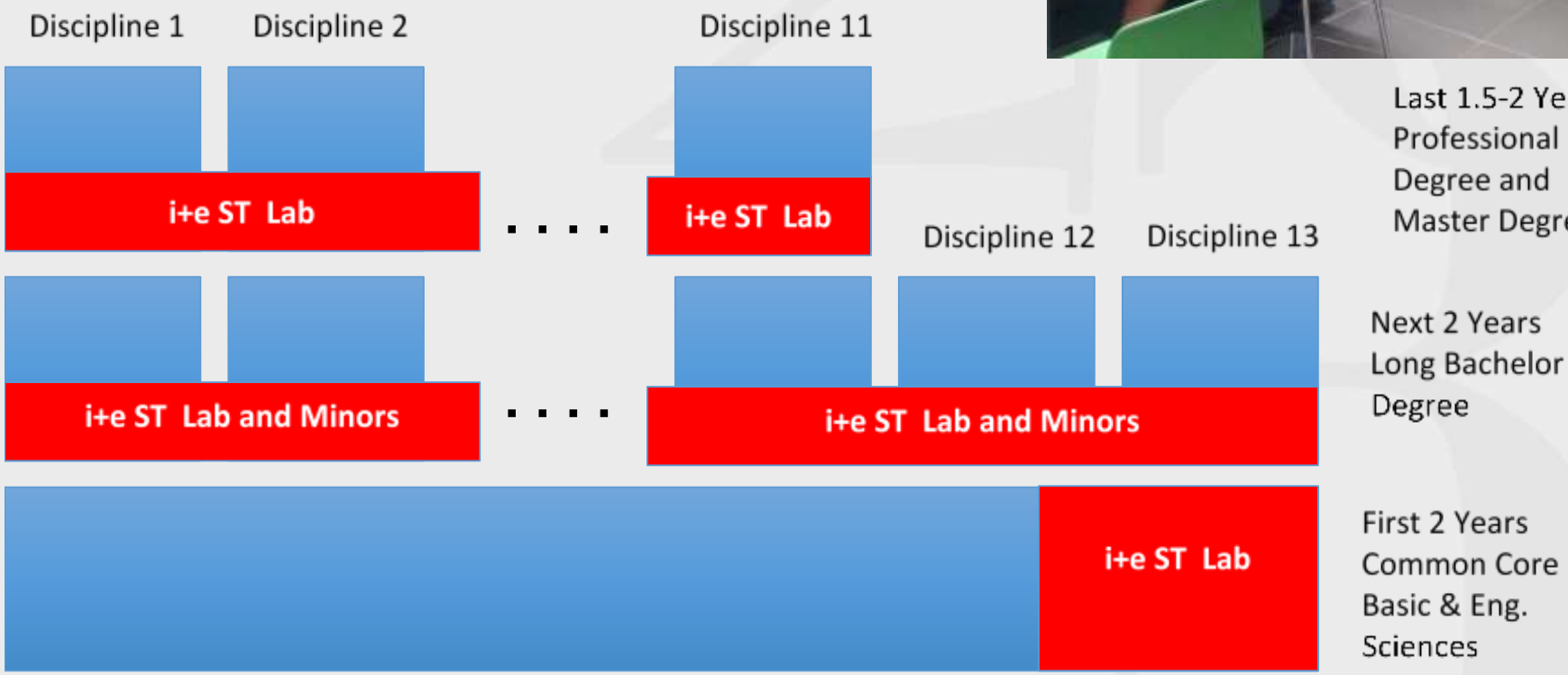
Innovation + Entrepreneurship



"I use my math major every day — I don't use the MBA quite as much"

"My intellectual curiosity goes more toward problem solving than spreadsheets."

Running a company, to him, is really about problem solving …something he learned about in his undergraduate studies, due to "the inherent intellectual curiosity around math and physics."

General Electric CEO Jeff Immelt

BUSINESS INSIDER

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Discusión …

¿Cómo ven el desarrollo tecnológico en sus sectores hacia el 2030?

¿Qué tipo de ingenieros y geólogos se necesitarán en esos escenarios y visiones?

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