

# ME310 Global New Product Design Innovation

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Global network of designers, engineers and innovators challenging complex real world problems

2012-2013 Academic Year



**ME310 Global** is a part of the **Stanford School of Engineering** and **Stanford University**



# Our Neighbors

Note: Not all corporations shown here are affiliated with Stanford University. Map copyright by Google 

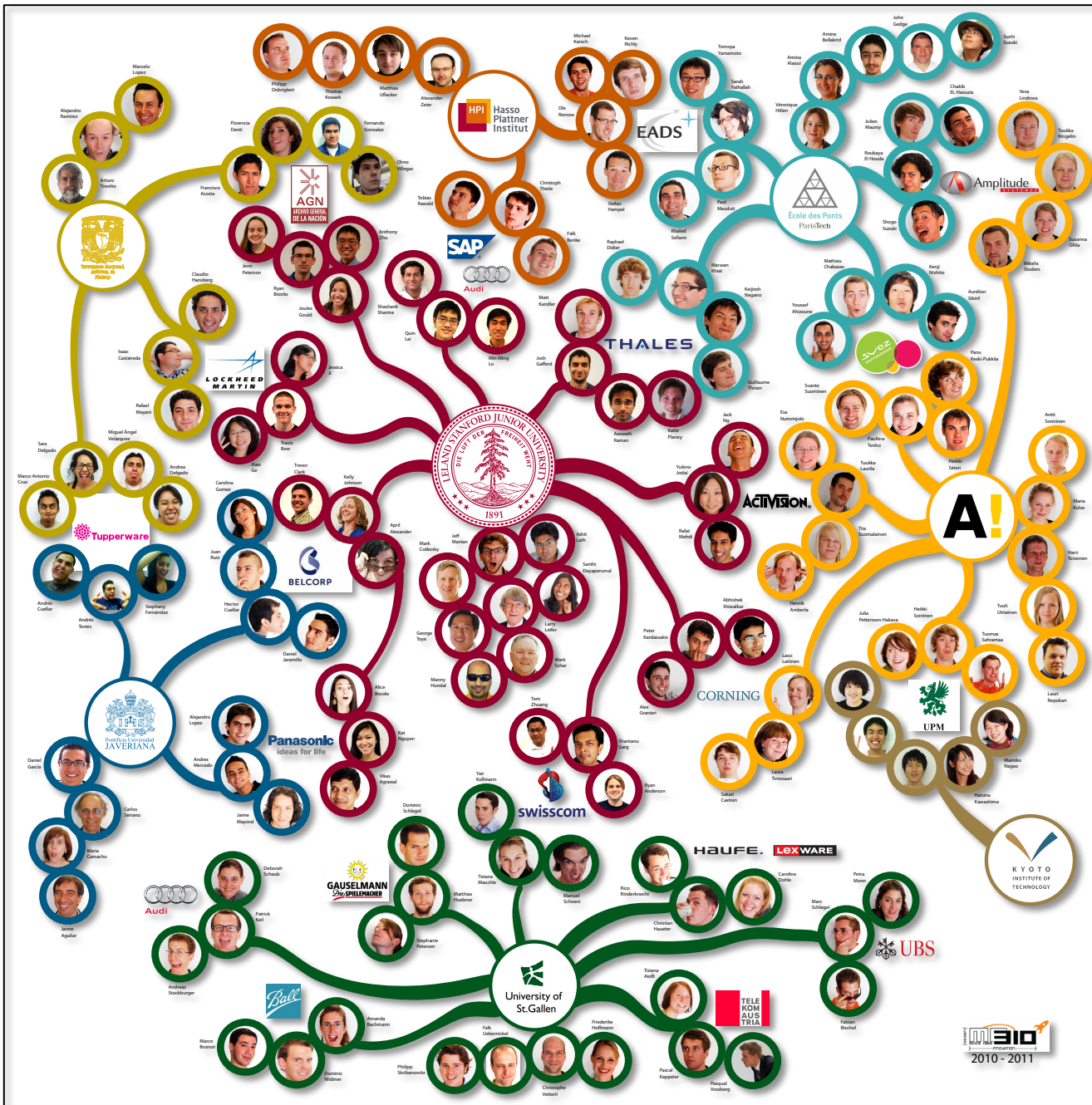
## ME310 Global Students



**ME310 Students** are the very best engineering and design students in the world! Each year about 100 masters-level students participate in ME310 Global including Stanford Engineering students and students from 8-10 off the top global engineering and design universities.

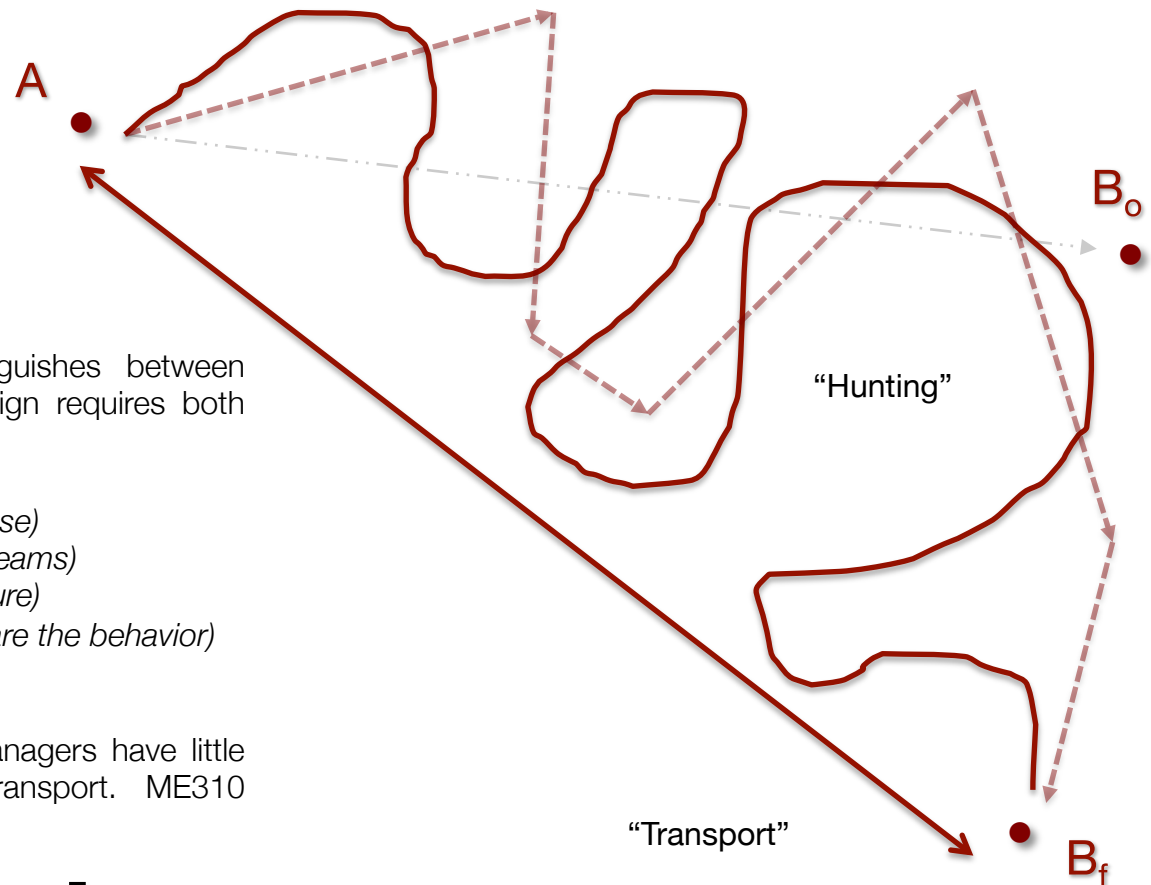
# Our Students

# Our Students



2010 - 2011

## ME310 Global Learning Concept



**The ME310 Learning Concept** distinguishes between “hunting” and “transport.” Successful design requires both behaviors. The rules:

- Hunting is not “wandering” (*have a purpose*)
- Never go hunting alone (*multi-capability teams*)
- Don’t give up too early (*patience with failure*)
- Don’t confuse transport as hunting (*declare the behavior*)
- Bring it home (*deliver results*)

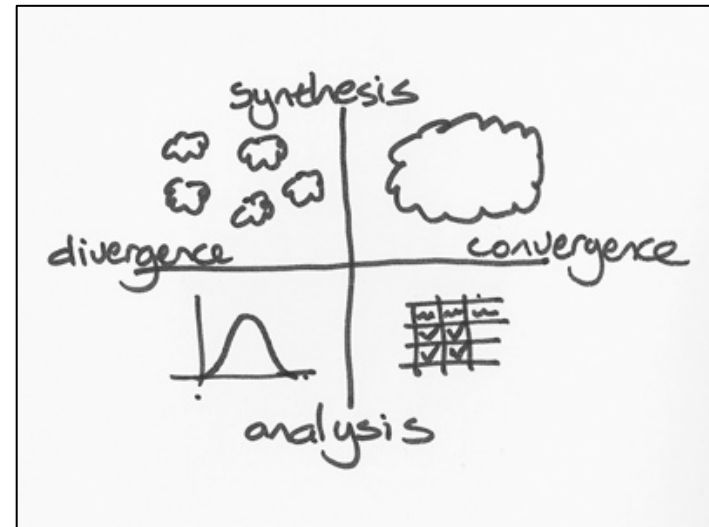
All too often, engineers and corporate managers have little tolerance for hunting and confuse it with transport. ME310 seeks to teach how to balance both.

## Our Approach

Ingold, T. (2007). *Lines: A Brief History* (1st ed.). Routledge.

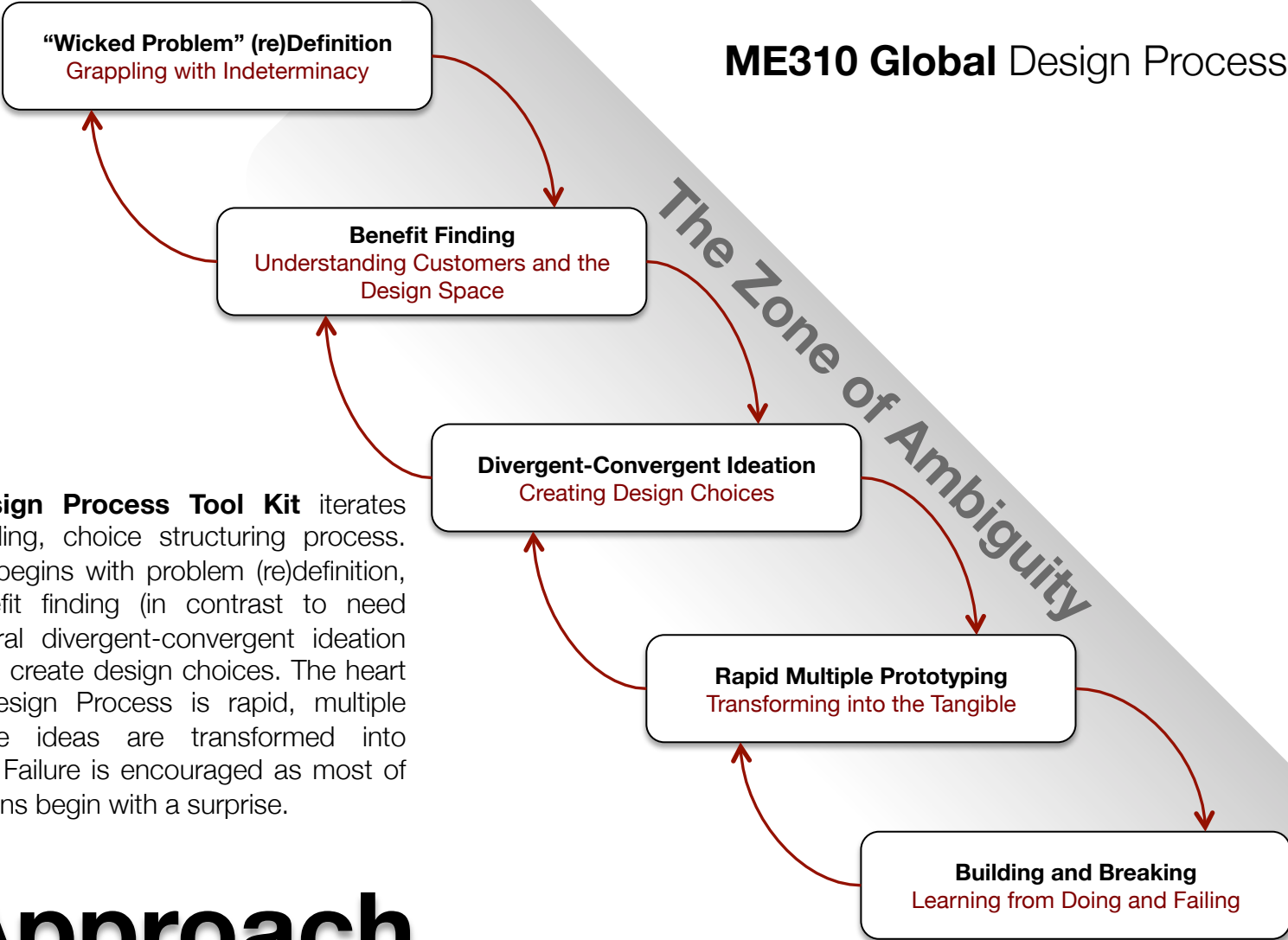
## ME310 Global Design Tool Kit

**The ME310 Design Tool Kit** helps designers make choices. *Divergence* thinking is the process that creates choices, while *Convergence* thinking seeks to make the best choices. Design thinking also requires the interaction between *Analysis* and *Synthesis*, which is a process of breaking problems apart and putting ideas together. Often, the very best design ideas come from the tension created by conflicting approaches to solving a problem.



# Our Approach

# ME310 Global Design Process

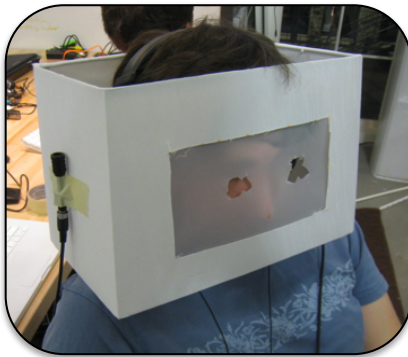


The ME310 Design Process Tool Kit iterates through a cascading, choice structuring process. The project work begins with problem (re)definition, followed by benefit finding (in contrast to need finding) and several divergent-convergent ideation exercises that help create design choices. The heart of the ME310 Design Process is rapid, multiple prototyping where ideas are transformed into tangible products. Failure is encouraged as most of the very best designs begin with a surprise.

# Our Approach

## ME310 Global Prototyping

**The Swisscom Challenge:** Make videoconferencing more appealing and the preferred method of communicating



**Conceptual Prototype**  
"Guest-Host Paradigm"



**Dark Horse Prototype**  
"Vid Zeppelin"



**Funky Prototype**  
"Binaural Tilt"



**Functional Prototype**  
"Shady View"

**Prototyping** is at the very heart of the ME310 design process because it is the most effective way to transform ideas into tangible products. Students create numerous prototypes to articulate their vision and test their design assumptions. Through iterative prototyping in many ways, broad problem statements are refined into concrete concepts that are eventually incorporated into a final, fully functional "reference model" prototype.

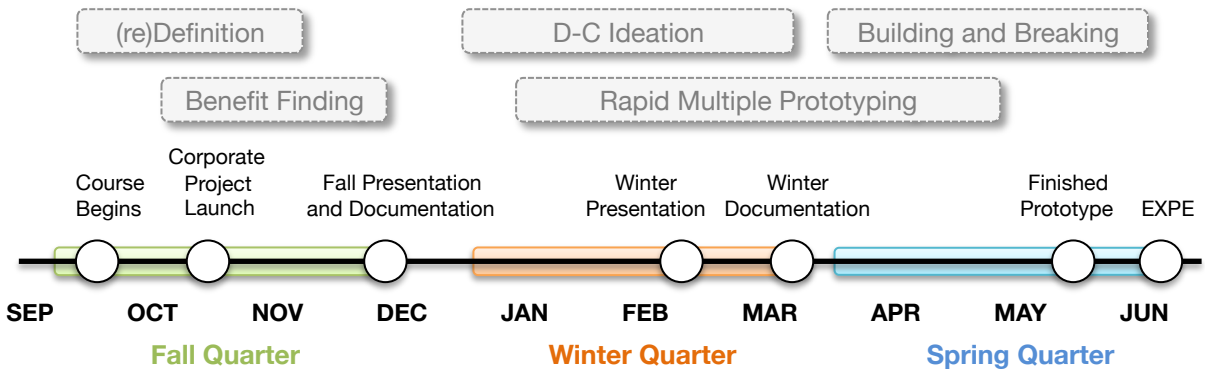
## Our Approach



**Reference Model Prototype**  
Swisscom: VVER

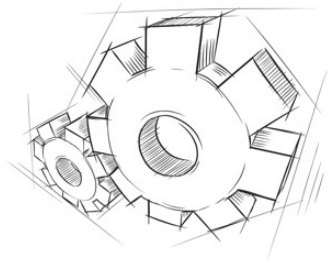


# ME310 Global Time Line



# Our Approach

# Contextual Frame



**Applied Technology**  
From a technology perspective

**Business Viability**  
From a commercial perspective



**Resource Environment**  
From a sustainable perspective



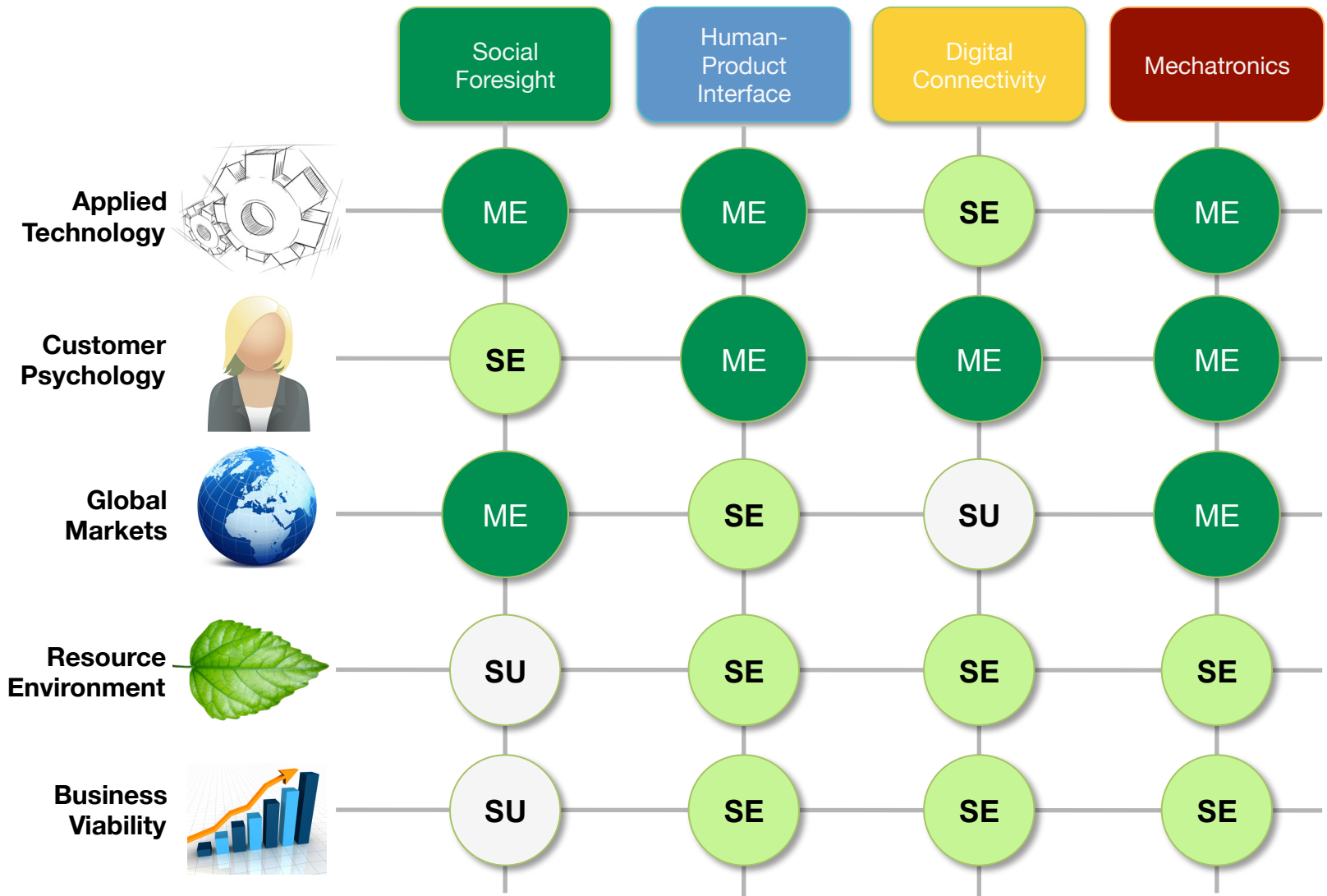
**Global Markets**  
From a multi-cultural perspective

**Customer Psychology**  
From a customer or consumer perspective



**Consumer** Frame

## Factors influencing New Product Design



● ME310 Global competency   
 ● Stanford Engineering competency   
 ● Stanford University competency

# ME310 Global New Product Design Competencies



- **Problem re-definition** shapes the innovation space
- **Extensive interim reports** are shared quarterly
- **Video conferences** keep collaboration alive, bi-weekly proven best
- **Customer and client market research** shapes the decision tree
- **Preliminary conceptual prototypes** test the problem formulation
- **Multiple Functional prototypes** test the solution path
- **Leadership briefings** give Face-to-Face synchronization quarterly
- **Stanford Design EXPE**rience in the 1<sup>st</sup> week of June wraps-up the project
- **Corporate Partner Dinner** has special seating for supporters
- **Resumes and Contact information** for all ME310 Global students
- **Stanford Design Professors** are available at all times for informal counseling
- **Re-design workshops** can be arranged for your Executive Group
  
- **Importantly**, you have a concrete gateway to **Stanford University**

## ME310 Global **Outcomes**

**ME310 Global Partners** work with 2 teams of 3 to 4 graduate students each. One team is enrolled at Stanford and the other is at a international partner university. They will be 110% dedicated to your innovation challenge for over 8 months. Corporate partner involvement provides the reality checks necessary for individuals and teams to develop real-world innovation skills and experience. Most partner universities are outside the United States. All companies have global operations. These partnerships bring global diversity to the project teams and students are given the opportunity to experience true global collaboration, a skill required in today's connected world.



# ME310 Global Partners

# ME310 Global New Product Design Innovation

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For more information via email, please contact:

Professor Larry Leifer  
ME310-Global **Academic** Partner Coordinator  
[leifer@cdr.stanford.edu](mailto:leifer@cdr.stanford.edu)

For more information via telephone, please contact:

Professor Mark Cutkosky  
ME310-Global **Industry** Partner Coordinator  
mobile = +1 650 450 0589

## 2012-2013 Academic Year



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brochure design by Mark Schar, PhD, MBA, Lecturer