Design Studio

A Product Design Course for Graduate Entrepreneurs

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Oct. 30, 2015

Knowledge Workers

- New Graduate is a Subject Matter Expert (SME)
  - Knows how to **do things right**
- Industry needs Knowledge Workers*
  - Knows the **right things to do**

*Peter Drucker, 1966, "The Effective Executive", Reprint 2002, Harper Business Essentials

Knowledge Workers

- New Graduate is a Subject Matter Expert (SME)
  - Knows how to **do things right**
- Industry needs Knowledge Workers*
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- **A Knowledge Worker has external focus:**

  - Innovates to Delight the Customer
  - Works effectively with teams
    - Risk management
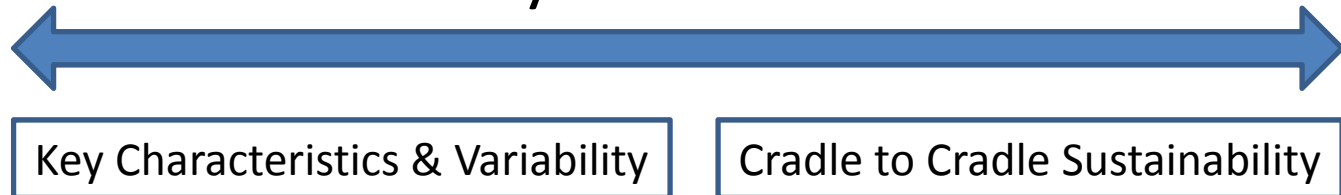   - Continuous improvement
    - Gated design process

*Peter Drucker, 1966, "The Effective Executive",   Reprint 2002, Harper Business Essentials
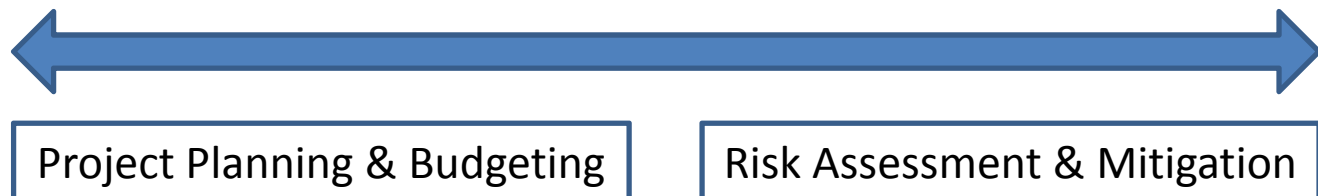
Self Contained or Gateway to…

- Design for Customers:

  Market Assessment — Rapid Prototyping

- Design for Manufacturability:

  Key Characteristics & Variability — Cradle to Cradle Sustainability

- Planning

  Project Planning & Budgeting — Risk Assessment & Mitigation

- Problem solving (DOE, Taguchi, Six Sigma)

  Mathematical Foundations — Design Optimization
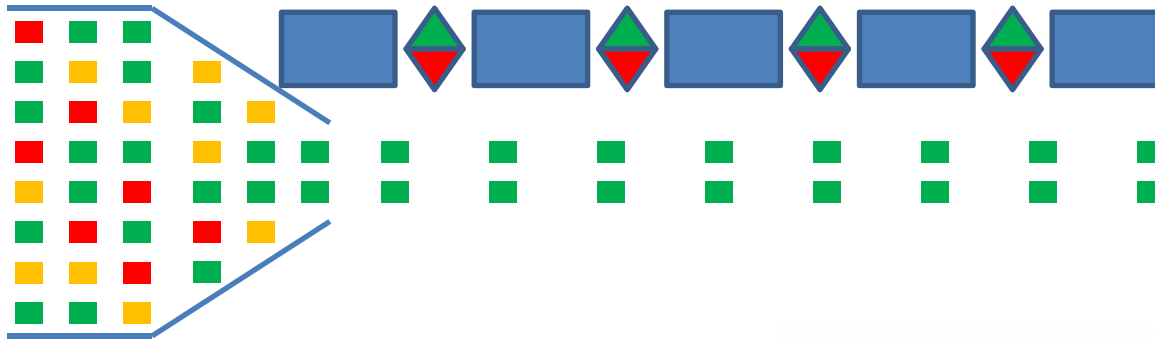
Current Status
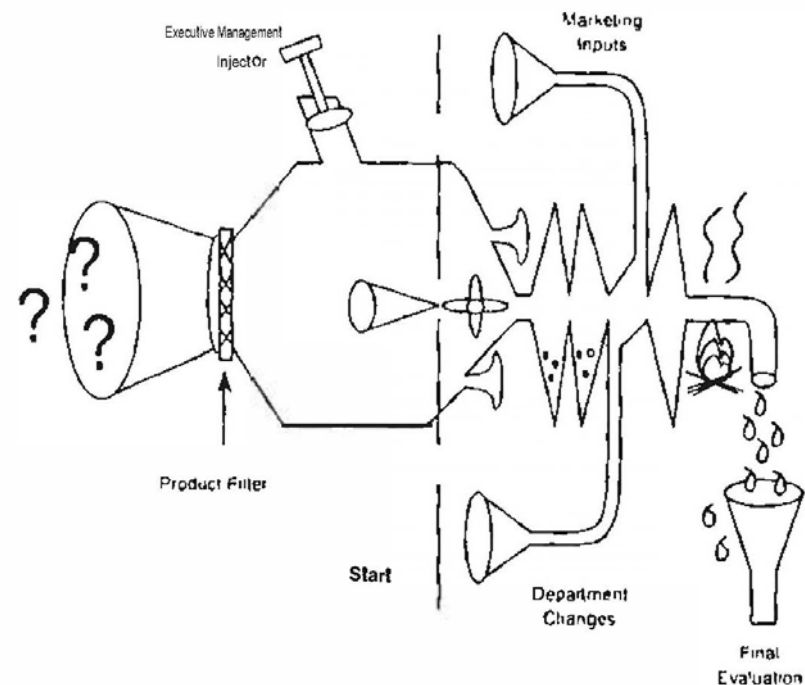
- Some corporations have well managed Processes
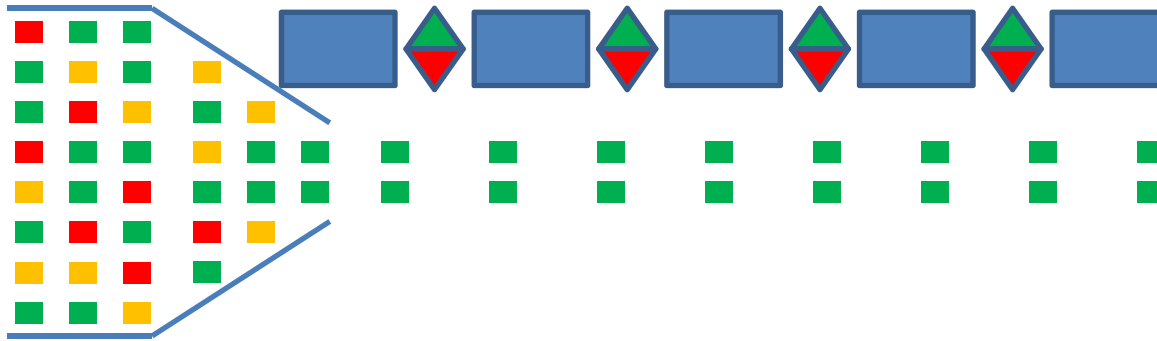
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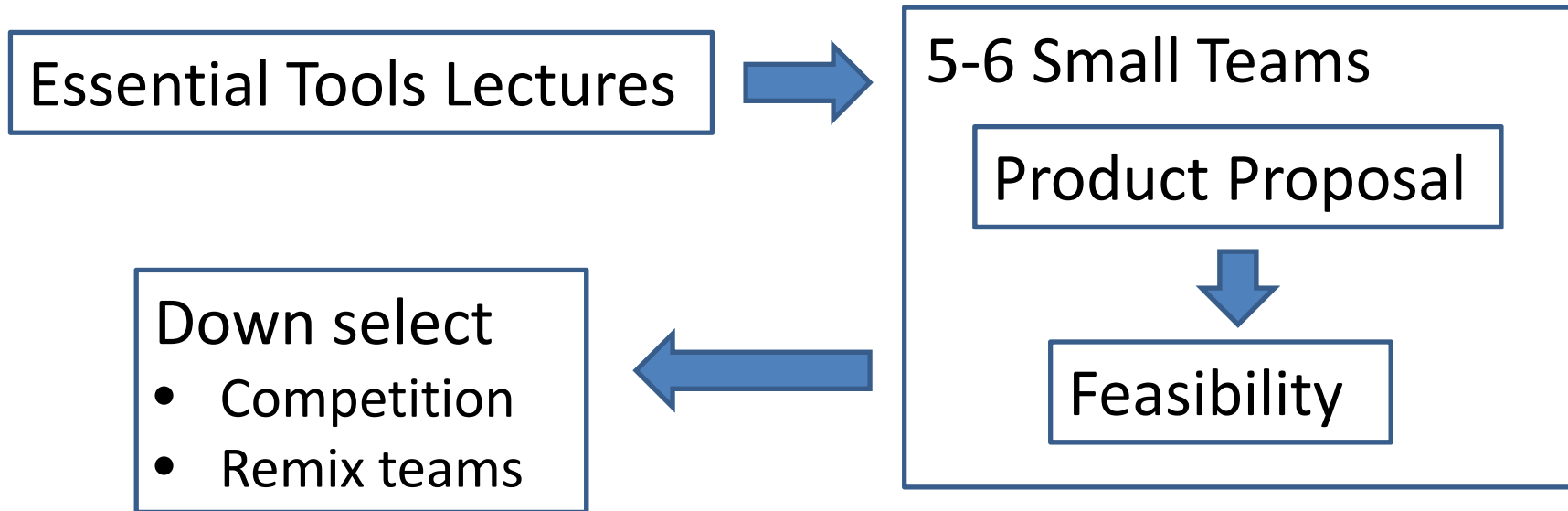
- Others, not so much…

- Cornell grads will encounter both!

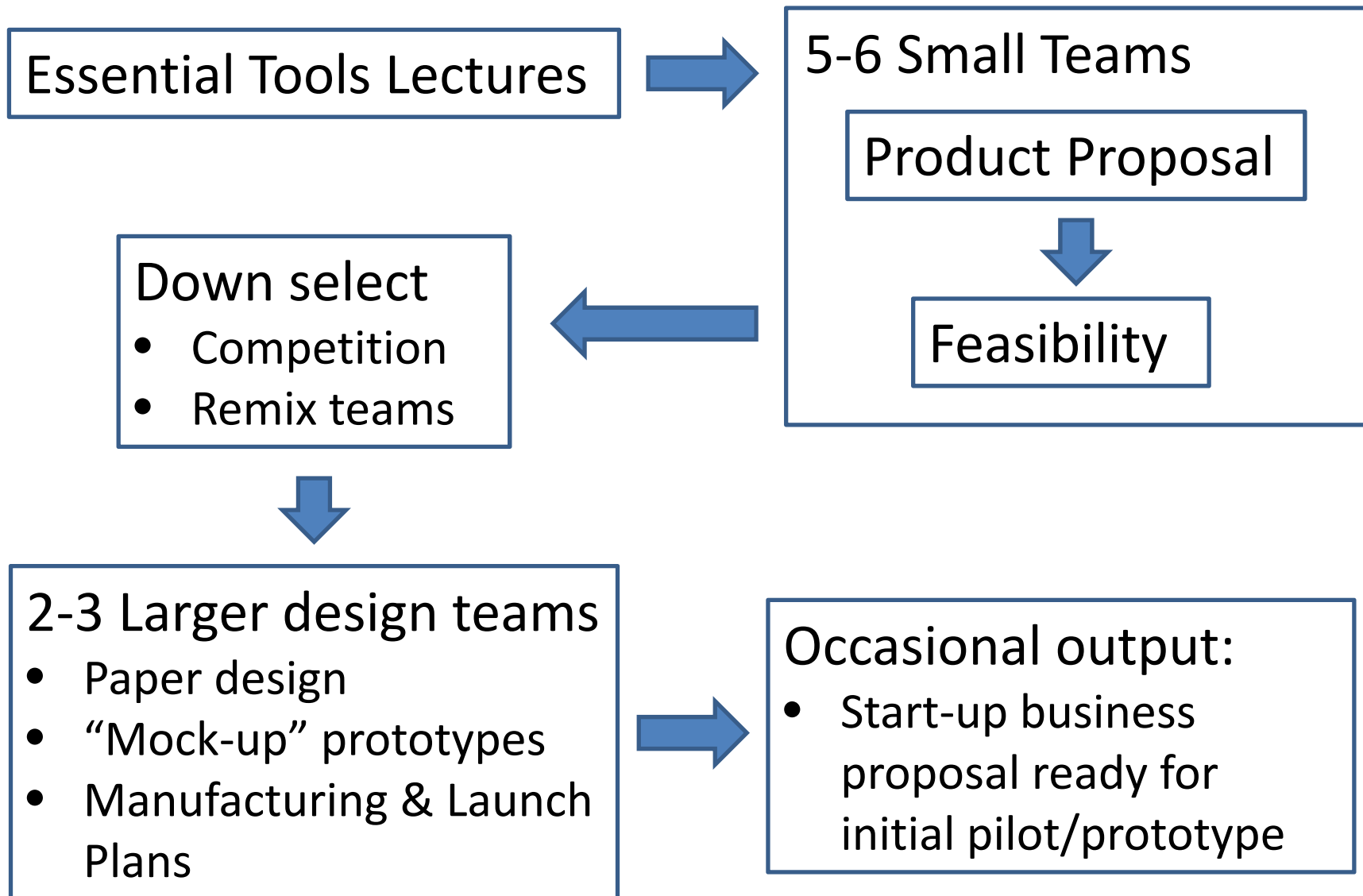Clark & Wheelwright, 1993, "Managing New Product and Process Development", The Free Press

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Goal: Upgrade SME to Knowledge Worker

Essential Tools Lectures → 5-6 Small Teams

Product Proposal → Feasibility

Down select
- Competition
- Remix teams

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2-3 Larger design teams
- Paper design
- "Mock-up" prototypes
- Manufacturing & Launch Plans

Occasional output:
- Start-up business proposal ready for initial pilot/prototype

Essential Tools Lectures

- Corporate structure
- Roles & responsibilities
- Presentation skills
- IP & Patent interpretation
- Gated development
- Planning & Risk Management

Lectures During Proposal Writing

- Business strategy examples
  - Start-up vs Large Cap
  - Consumer vs B2B
- Requirements (House of Quality)
- Return on investment estimation

Lectures During Feasibility Investigation

- Technology availability
- Project plan
- Launch window
- Risk assessment & mitigation
  - Technical
  - Market
  - Schedule

Design Lectures

- Prototype design
- Sustainable design
- Design for manufacturability
- User experience testing
- Planning for manufacturing & launch
- Statistics and Design of Experiments

Thank You!