

Kettering University TechWorks

How Can A *GREEN* Center Help the Automotive Industry Succeed?

- ▲ “Process” of Innovation
 - ▲ Intellectual Property
 - ▲ Commercialization

SAE *International*



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6 Books on Innovation

- ▶ **The Art of the Start** by Guy Kawasaki
- ▶ **The Art of Innovation** by Tom Kelley (IDEO)
- ▶ **Innovation: The 5 Disciplines** for Creating What Customers Want by Curt Carlson and William Wilmot
- ▶ **Managing Innovation** by Joe Tidd and John Bessant
- ▶ **Harvard Business Review On Innovation**
- ▶ **The Human Side of Managing Technological Innovation** edited by Ralph Katz

Our Discussion

- ▶ The Lingo
- ▶ About Kettering
- ▶ What is the “Process” of Innovation?
- ▶ Protecting Innovations and Being Sure of Your Own Position
- ▶ Commercializing

Lingo

- ▶ Innovation
- ▶ Intellectual Property
 - ▶ Patent
 - ▶ Trademark
 - ▶ Copyright
 - ▶ Infringement
- ▶ Commercialization

- ▶ By the way, any Kettering Alumni here?

Innovation and Commercialization at Kettering: **The Students**

- ▶ Graduate more Mechanical Engineers (800) annually than any other American University
- ▶ U.S. News and World Report
 - ▶ Number 1 in Industrial and Manufacturing Engineering
 - ▶ Number 2 in Mechanical Engineering
- ▶ Co-operative Education Model
- ▶ Entrepreneurship Minor
- ▶ Innovation and Commercialization Courses
- ▶ Student Entrepreneur Society
- ▶ Kauffman Foundation for Entrepreneurship “TechVenture” training

Highly disciplined, passionate & experienced students

Innovation and Commercialization at Kettering: **The Faculty**

- ▶ 150 - Most are industry-experienced with PhDs
 - ▶ Small class sizes, “learner-focused” education
 - ▶ Mentor on thesis projects
 - ▶ Organize capstone projects
 - ▶ Available for Sponsored Research projects
 - ▶ 36 have taken “Entrepreneurship Across the Curriculum” our Kern Family Foundation sponsored program to foster an entrepreneurial mind-set in the students
 - ▶ 12 have taken the “TechVenture” commercialization training
 - ▶ Numerous are actively commercializing innovations
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Expert faculty fostering a culture of technology intrapreneurship

Innovation and Commercialization at Kettering: **The Staff**

- ▶ ~100 with relevant student interaction
- ▶ Lean organization
 - ▶ Admissions ↔ Co-op Managers
 - ▶ Financial Aid
 - ▶ IT Department / Food Service / Security / Rec Center
- ▶ A new Kern Family Foundation sponsored program: “Agile Student-Centered Enterprise” to change the way we work while re-inforcing an entrepreneurial mind-set in the students
- ▶ Several took the “TechVenture” commercialization training

Professionals dedicated to the business of education and research

Innovation and Commercialization at Kettering: **The Place**

- ▶ World-class laboratories
- ▶ New web-lab complex:
 - “The [INSERT YOUR NAME HERE] Innovation Center at Kettering University”
- ▶ Technology business incubator
- ▶ Federal and MEDC-sponsored Business Accelerator with structured Commercialization Program
- ▶ About 50 Client Companies (mostly very early stage)
- ▶ About 65 Coaches – Technology and Business Experts
- ▶ 2 back-to-back 1st Place Wins in the Great Lakes Entrepreneur Quest” business place competition

Actively Serving Technology Economic Development in Michigan

The “Process” of Innovation

- ▶ No single right path.
- ▶ Nurturing Environment
 - ▶ Listen to all Voices
- ▶ “Eco-system”
- ▶ Rewarding Behaviors
- ▶ Awareness of emergent needs and interests in the marketplace



The “Process” of Innovation

- ▶ Observation, discussion, reporting, intuition spark the
- ▶ **Idea**
- ▶ (Or, you can buy someone else’s ideas and innovations via university or corporate **technology transfer**)
- ▶ **Assessment**
 - ▶ Concept sound? Is there a market? \$1,000 solution for a \$5 problem? Why isn’t it in the market?
 - ▶ Technologically feasible?
 - ▶ Right team? Right place? Right time?
 - ▶ Is an independent assessment appropriate?
 - ▶ (Has someone else already done it?)

The “Process” of Innovation

- ▶ Develop the concept – brainstorming
- ▶ Mind-map out key aspects, issues, and assumptions (Wikipedia: Freemind software, release candidates)
- ▶ Scope out what the innovation project(s) would look like
 - ▶ Objective(s) and Application(s)
 - ▶ Basic GANTT (What, who, when, what order, how much?)
- ▶ Testing assumptions (go external?)
- ▶ Testing the market (examine substitutes, competitors, the Null option)
- ▶ Testing support: “A 3 Minute Elevator Pitch”

The “Process” of Innovation

- ▶ Gather resources
- ▶ Build a team (Internal? External? An “Advisory Board?”)
- ▶ Write a very terse plan (Eisenhower’s plan to recapture Europe was one page)
- ▶ Organize efforts (“Scrum” project management)
- ▶ Set stage-gates
- ▶ Monitor on-going results and pace of achievement
- ▶ Expand the eco-system as needed (ask for help)
- ▶ Sober feasibility assessments -- Kill-off bad ideas fast

The “Process” of Innovation

- ▶ Consider contractual arrangements to speed progress
 - ▶ Kettering’s Sponsored Research Programs (810-762-9728)
- ▶ Early and convincing Proof-of-Concept?
- ▶ Design
- ▶ Proto-typing
- ▶ Objective, rigorous testing
- ▶ Results relative to competing technologies? What reasonable expectations for attainable near-term gains?
- ▶ Once you really have something, do you own...

“Intellectual Property”

- ▶ Don't be dumb about intellectual property
 - ▶ Get competent legal assistance to ascertain
 - ▶ US and Foreign patent options? Trade secret? Nothing?
 - ▶ What may need to be licensed in?
 - ▶ Other issues? (...Regulatory?)
 - ▶ Pay me now or pay me later...
 - ▶ Be cognizant of what “protections” really exist and what the cost of prosecuting infringements may ultimately be.
- ▶ What is the competitive value of sharing (liberal licensing or free) foundational technological advances? To your firm, to the sector, to the nation?

Commercialization

- ▶ = “Moving Ideas to Market” (*A plug for the C.S. Mott Foundation-funded program of the Prima Civitas Foundation. Volunteers needed!*)
- ▶ First, is an independent Commercialization Review appropriate?
- ▶ A new team: Get commercialization experts involved early.
 - ▶ Marketing
 - ▶ Financial planning
 - ▶ Funding requirements
 - ▶ Partners, alliances, advisors
 - ▶ Manufacturing and sourcing

Commercialization

- ▶ The next “Eisenhower” plan
- ▶ Have a solid “Elevator Pitch” which everyone can deliver:
 - ▶ Need
 - ▶ Approach
 - ▶ Benefits at the given cost
 - ▶ Competition
 - ▶ (The “Ask”)
- ▶ Organizational Development strategy
- ▶ Production planning
- ▶ Market entry and sales planning
- ▶ Finalize preparations, and ...



Thank you!

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