Serendipity in Entrepreneurship: Engineering Your Own Breaks

Kevin Curry, University of Kansas
Joe Levens, Pittsburg State University
Jeffrey Blessing, Milwaukee School of Engineering
My Dilbert moment:
Outline for the session:

• Serendipity Model of Opportunity Identification
• Joe – how a large program at Pittsburg State came about and grew through serendipitous discovery
• Jeff – how serendipity played a role in the start of their entrepreneurship program and the Innovation Chase Event
Defining serendipity

accidentally discovering something good when searching for or researching something else
Prior Knowledge
Prior Knowledge

Contingencies

Search
Domain of Prior Knowledge

• Don’t stop doing what you naturally do
  • Industry publications
  • Conferences
  • MOOCs
  • LinkedIn Groups
“We are psychologically wired to find the things that match our expectations and discount what doesn't. For most of us, our education and work environments only reinforce this behavior. We are tunnelvisioned.”

Thor Muller co-author of Get Lucky: How to Put Planned Serendipity to Work for You and Your Business
Domain of Search

• Be more obsessive about your search
• Search within your search
Domain of Contingency

“We are psychologically wired to find the things that match our expectations and discount what doesn't. For most of us, our education and work environments only reinforce this behavior. We are tunnelvisioned.”
Domain of Contingency

• Increase your odds by interacting with large numbers of people
  • Live
  • Virtually
• Put some randomness into your routine
• Use instructor connections
Domain of Contingency

• Don’t forget the people closest to you
• Notice others needs and share your own
• Follow up quickly
Domain of Contingency

I believe life is a series of near misses. A lot of what we ascribe to luck is not luck at all. It's seizing the day and accepting responsibility for your future. It's seeing what other people don't see and pursuing that vision.

– Starbucks CEO Howard Schultz
Remove Organizational Constraints

• Don’t punish employees for failed efforts
• Facilitate the circulation of information and the sharing of knowledge
• Support the growth of knowledge and connections
• Reward, don’t belittle, serendipitous successes
“In the fields of observation, chance favors only the prepared mind.” attributed to Louis Pasteur
Our MISSION
Pittsburg State University

“No individual shall be obliged to choose between an education without vocation, and a vocation without education.”

Russell S. Russ
First Institutional Leader 1903
School of Construction

- Interior Design (Proposed)
- Environmental & Safety Management (BST)
- BAS Technology Construction Emphasis (2 + 2)
- KCCA
- Construction Management (BST)
- Construction Engineering Technology (BSET)
Kansas Center for Construction Advancement

- Promoting Careers in Construction K-12
- Community College 2+2 Programs
- Professional Development
- Continuing Education Programs
- Provide Industry Support
PSU School of Construction
PSU School of Construction
Kansas Technology Center - 1997:
• 278,700 sf of modern and flexible learning environments
• $29M (1/3 ea. - Federal, State & Private Funding)
• 13 computer labs with approx. 341 online work stations
• 57 technical laboratories for student learning
• Over $26 million in equipment
Company Day – 2014

91 Companies for Construction/ESM majors in one place, the same day
PSU Construction Alumni Association

• **Founded in 1988 ($200)**
  • To provide scholarships
  • Support the PSU construction programs
  • Promote relationships with industry partners
  • Facilitate networking among PSU construction program alumni

• **Funding**
  • 3 Golf Tournaments each year
  • Company & Individual Donations
  • Annual net proceeds average $57,000
  • Endowment = $269,000

• **Scholarships**
  • Over 450 awarded
  • $411,000
SERENDIPITY IN ENTREPRENEURSHIP

JEFFREY BLESSING, PH.D., EE & CS PROFESSOR, RADER SCHOOL OF BUSINESS MILWAUKEE SCHOOL OF ENGINEERING
Entrepreneurial Engineering

• An MSOE regent & benefactor built his $2B generator business using both engineering and business talent
• His engineering training and education gave him the technical background needed to start his business
• However, the business side he learned on his own
  • The “hard way”
• Why doesn’t an engineering education also teach business skills?
• In 2007, I was asked to take the lead on developing an Entrepreneurship program for engineering and technology students.
What is Entrepreneurial Engineering?

• Teach entrepreneurial skills to engineering students and technology students
  • Not necessarily to make students entrepreneurs
  • Create a “mindset” of entrepreneurial thinking in the profession
  • Make better engineering decisions based on business acumen and customer awareness

• How does one teach an “entrepreneurial mindset”?
  • Innovation is embraced by engineers and scientists
  • Innovation is often embodied in startup businesses
  • Innovation skills can be taught through experiences
  • Innovation Chase captures the “experiential learning”
Friday, April 11, 2008
Illinois Institute of Technology, 565 West Adams Street

Starting with just a single clue, teams of the brightest undergraduate entrepreneurs from eight universities will follow a path of quick business decisions, innovation and money to compete for cash prizes. The first place team will receive $2,000, second place $1,000, and third place $500.

All of downtown Chicago will be the Quest’s playing field. Throughout it, several innovative Chicago-area companies and organizations will host tasks to test the participants’ entrepreneurial skills. Clues will lead teams from one location to another, until they arrive at the site of one of the Quest’s four main tasks: an elevator pitch, a rapid prototyping activity, a marketing materials activity, and a written opportunity assessment report. Video clips and photographs taken during the Quest will be published online in real-time so that the event can be followed throughout the day.

Each Quest team consists of five undergraduate students and a faculty or staff champion. Team registration costs $200 and will be held on a first-come, first-serve basis starting on February 15. For more information on how to sign up for the Quest will be available at www.iit.edu/~entrepreneur soon.

**SCHEDULE**

8:30 a.m. Opening ceremony
Continental breakfast will be served, and rules will be explained to participating teams.

10:00 a.m. Quest begins
First clues are given out, and the Quest officially starts. Teams will have five hours to find as many clues and complete as many tasks as possible.

2:00 p.m. Opportunity Assessments due
For the Opportunity Assessment task, each team will need to complete a three-page report.

3:00 p.m. Final Quest task
All teams and volunteers will gather at the same site for a final task.

4:00 p.m. Closing ceremony
Teams will present their final project during the ceremony, and awards will be handed out to the winners.

5:00 p.m. Reception
Chicago Entrepreneurial Quest

• First iteration of our idea of experiential learning in teaching entrepreneurial thinking
  • Entrepreneur’s Quest was trademarked!
  • Rebranded as “Chicago Innovation Chase”

• On Amtrak ride home, <serendipity>
  • Met the regional sales manager for General Motors
  • Discussed all the excitement around Innovation Chase idea
  • Brainstormed what an Automotive Innovation Chase could be
  • Identified a Chevrolet dealer interested in the idea
  • Great Race Innovation Chase was born </serendipity>
Holz Chevrolet sponsored The Great Race Innovation Chase at MSOE

First all-day chase event consisted of 8 MSOE teams
  • Up to 8 students on each team
  • Multidisciplinary: Engineering, Business, Technology, Nursing, etc.
  • Worked out the bugs on the 8 challenges of the chase competition

Second all-day event was official Great Race Innovation Chase
  • Invited 8 universities to participate
What Is The Innovation Chase?

• A one-day, team-based competition meant to:
  • Inspire innovative thinking
  • Develop entrepreneurial skills in students
  • Create excitement around entrepreneurship in engineering

• Each team consisted of 5-8 students and one faculty member

• Sponsors were GM, OnStar, GMAC and Holz Chevrolet

• Each team had to develop a complete marketing package for their assigned Chevy vehicle
The Vehicles

• Two Tahoe Hybrids
• Two Malibu Hybrids
• Two Equinox Sports
• Two Turbo HHRs

• Each team was randomly assigned a vehicle to drive to the 8 stages of
The 8 Challenges of the Competition

• TV Commercial – Calatrava Art Museum
• Print/Web Strategy – Discovery World, WI
• Accessories – Holz Showroom
• Six-Point Sales Pitch – Walk-around
• OnStar – Navigation Challenge
• Financing (GMAC) - Brookfield
• Tire Rotation / Oil Change – Pit Crew
• Team meeting at Command Center
TV Commercial

• Work with a professional videographer to produce a 60 sec. commercial in < 1 hr.

• Creativity and ability to think-on-your-feet

• Videographer judged results on message clarity and artistic content
TV Commercial Videos

• Marquette University
• University of Illinois – Chicago
Print & Web Publication Strategy

• Develop poster ads for their vehicle using the Print & Publications Lab at Discovery World WI
Web/Print Strategy Video

• University of Illinois - Chicago
Accessories

• Working in Dealer’s Showroom, used Chevy.com to accessorize the vehicle to appeal to the target demographic market
• Teams could design an accessory if it wasn’t available for their vehicle
• Parts Manager judged teams on the justifications of their selections
Accessories Video

• Milwaukee Institute of Art & Design (MIAD)
Walk-around

• A 6-point sales pitch on the features of the vehicle
• Tests if teams did their homework
• Two dealership trainers were judges of the walk-around competition
• Teams sent one representative to do the pitch
• Graded on factual completeness and ability to answer questions
OnStar Challenge

• Come up with a new service that could be offered through OnStar
• OnStar reps judged the appropriateness of the idea to the stated vision and mission of OnStar
• Several teams came up with the Sync-type features Microsoft delivers with Ford
OnStar Video

• Milwaukee School of Engineering
Financing (GMAC)

• Work with GMAC rep to come up with a financing campaign for first-time car buyers
• Understanding credit scores was key to this stage
• Rolling lease model was novel idea
  • allow existing lease holders to change to hybrid vehicles and pay for difference with fuel savings
Pit Crew

• Teams performed oil changes and rotated the tires on a designated vehicle
• Team-building exercise
• Service Managers graded teams on their speed and workmanship
Pit Crew Video

• Milwaukee School of Engineering
Results

• Surveys
  • Asked for Likes, Dislikes and Improvements and Lessons Learned
  • Open-ended, essay-type questions (no prompting)

• Anecdotal
  • Team stories
  • Leadership skills learned in real time
## Survey Responses (Top 2)

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<th>Activity</th>
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<th>Apr. 12&lt;sup&gt;th&lt;/sup&gt;</th>
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<td>Most Liked</td>
<td>Commercial</td>
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<td>17%</td>
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<td></td>
<td>Walk-around</td>
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<tr>
<td>Most Disliked</td>
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<td>12%</td>
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<tr>
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<td>Pit Crew</td>
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<td>Add Design</td>
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<td>22%</td>
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<td>Learned</td>
<td>Think on feet</td>
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<td>17%</td>
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<td></td>
<td>Marketing plan</td>
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<td>38%</td>
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<td>23%</td>
<td>17%</td>
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<td></td>
<td>Teamwork/build.</td>
<td>12%</td>
<td>17%</td>
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<td>What will you</td>
<td>Ask questions</td>
<td>10%</td>
<td>5%</td>
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<tr>
<td>do differently</td>
<td>Show confidence</td>
<td>2%</td>
<td>10%</td>
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Charged up about innovation

Contest tying green tech, business lures teams from MSOE, MIAD

By Jonathan Planned

"One thing about innovation is that it takes individuals with many different skills to pull it off. How do you teach that? This is how we are going to teach it."

Milwaukee Journal Sentinel

Lyrics linger on fathers, daughters

By Ann DeKraai

"If you give a man a fish, give him the skills to put it on the table."

Milwaukee Journal Sentinel
Teams charged up for contest

although the school’s most experienced entrepreneurial students are helping coordinate Saturday’s doings, Blessing said.

“All my best, all my veterans, are organizers,” Blessing said. “Many of the MSOE students are first-timers to this.”

One of the tech- and business-savvy students speeding the Chase along is Tad Mazik, who along Sam Nobiensky and Jeramey Jannene helped design different aspects of the event.

For example, Mazik designed programs to get video of the competition onto the Internet swiftly and smoothly: a streaming program that takes the raw feed from the remote sites converts it to Flash files and transmits it over the network; a “switcher” program that lets Mazik select what feed to show as the main feature on the Web site; and a special video player that lets the techs update content without requiring visitors to refresh their Web browsers.

The video streaming went “pretty smoothly” during the recent MSOE-only Innovation Chase, although feeds came in a little choppy from a few of the locations, so Mazik tweaked a couple of settings.

During the competition, Mazik serves as a producer and director, monitoring all of the incoming video and deciding what gets featured as the main event — although visitors also can select what they want to see.

Milwaukee School of Engineering students Chris Smith (left) and Heather Borrowsitz will compete against seven other teams in eight challenges Saturday in the Milwaukee Innovative Chase, including a rotating tires on a car.

The Internet broadcast will let the team captains monitor their squads’ progress, as well as spy on the competition and get advance intel on challenges they haven’t faced yet.

“You can potentially prepare that team for later in the day,” said Mazik, a junior who participated in a similar student entrepreneurial event last year.

“They can use the streaming video to their advantage.”
The winning MSOE team had some fun at Holz Motors. Pictured (from left) are Lue Yang, Jake Kattner, John Shih and Andrew Bronson.

Eight college teams participated in the daylong, Great Race Innovation Chase, in which students were challenged to devise marketing strategies for Chevrolet products.

Pontiac G8 stretched-body performance sedan lands in the USA

By Bob Plunkett

BORREGO SPRINGS, Calif. — The tricky route to Borrego Springs, an oasis of green golf courses and tall palm trees dotting the vast brown wilderness of California’s Anza Borrego Desert, comes out of Earthquake Valley on a straight shot before whipping over Yaqui Pass in the Valencito Mountains.

We select this roller-coaster road to sample the enthused spirit of a G8 GT, Pontiac’s affordable new rear-wheel-drive (RWD) performance sedan.

Then we’re flying down a steep slope on Yaqui Pass Road and pointing toward a blind decreasing-radius bend to the right.

At our swift clip, one wrong motion from hands on steering wheel or feet on step-and-go pedals would propel several tons of Pontiac steel headlong off the course and into some hard-rock boulders.

On this particular run, though, one driver makes no mistakes — but neither does the G8.

Rooted in a flat stance which hunkers in turns, the big sedan feels totally balanced, as if supported by a rubberized sky hook as it twists through the apex of the dangerous curve, then plunges ahead on an exit line with no protest from 19-inch summer-tire rubber.

Through the bend our car maintains a stable position with minimal lateral roll, the result of a stiffly braced unibody structure with sophisticated independent suspension elements connected at every corner post.

And there’s so much power lurking beneath the pedal.

The G8 GT packs a ripper V8 — GM’s 6.0-liter small-block V8 with AFM (active fuel management) technology to pare cylinders when boosted power is not needed.

Turn to G8 on page 7

Jerry Holz presents the first place trophy to Robert Printz, captain of the MSOE team. Holz Motors provided contest vehicles for the students as well as cash prizes for participants.
MSOE wins ‘Great Race’

said Barbara Holz Weis of Holz Motors. “The Innovation Chase was an incredible experience, and the MSOE students were truly bright and wonderful.”

Team assignments during the daylong challenge — which paid homage to television’s “The Amazing Race” and “The Apprentice” — included such varied tasks as designing a print ad for the new Malibu to rotating the tires on their competition vehicles to filming a simulated TV commercial at the Milwaukee Art Museum’s Calatrava addition.

“We felt so fortunate to partner with MSOE and General Motors on such a cool event,” added Holz Weis. “The kids were simply amazing.”

The event was organized by Judith Boll, GM area sales manager; Dr. Jeffrey Blessing, MSOE associate professor; and Jeramey Jannene, an MSOE student. Blessing said he took particular satisfaction in witnessing how the Chase unfolded, in real time and in streaming video.

“When Jerry Holz presented trophies and awards to the top three finishers, it was the perfect ending to an exciting day,” noted Blessing. “We trust that the teams will now practice their team-building skills on longer-term projects.”

For more information, visit www.innovationchase.com.

When you are a mat life and

Madison, Wis.

Motorists are urged to yield to emergency vehicles when encountered.

“Not yielding to emergency vehicles can lead to a delay of in an end to you, to endanger you and others near you,” said Wisconsin’s Emergency Vehicle Operations director, Dave Johnston.

HOLZ from P.1

Need a gas cap? Consider the cost

6. Do not drive too fast.

You should always check your vehicle’s gas level and carry a spare fuel cap.

When you are in a hurry, you may get frustrated and drive faster than the law allows. Take your time and stay safe.

5. Be aware that you may not detect a gas leak if you have not

4. On a vehicle, you may not detect a gas leak if you have not

3. If emergency traffic, obey the signs.

2. Do not block the way in through as possible, the

1. When emergency vehicles are already in

For more information, visit www.innovationchase.com.
Happy Monday Innovation Chasers! Here for your viewing pleasure is the official after video from the 2013 Chase at IIT. Relive all the magic and excitement, and stay tuned for Gonzaga’s video!
Weekly Innovation Challenge

Every Wednesday the Innovation Challenge exercises students’ minds and creativity.

WEDNESDAY 12-1PM Rotunda - MDH WIN $200

About the Weekly Innovation Challenge

Every Wednesday, Saint Louis University students have a chance to compete in the Weekly Innovation Challenge from 12-1pm in the Rotunda at Parks College. Students must form teams of three—these teams must include at least one engineering student and up to one faculty member. Most importantly, all participants must be from different majors/disciplines. The students are given an impromptu challenge and have one hour to compete. Whichever team completes the challenge successfully first wins $300 ($100 per teammate). Additionally, participants are asked to submit a weekly reflection on the challenge and one winner will be rewarded an additional $100. The events are sponsored by the Kern Entrepreneurship Education Network, the Coleman Foundation and Saint Louis University.

The goal of the competition is for students to exercise their minds and creativity, just as they would their bodies. Challenges...
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