Open Innovation with Eastman: New Models for Intersectional Ideas, Partnerships and Collaboration

Stewart Witzeman
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ALL IN FOR SAFETY

- Eastman is committed to enabling a safe and secure workplace for our team members, customers, and clients.
- Ultimate goal of zero injuries and process safety incidents worldwide
- Safety is personal and everyone is accountable to work as safely as possible.

Each person is ALL IN FOR SAFETY.
Every shift, every day, here and away from work, in all activities
Who we are

- A global specialty chemical company headquartered in Kingsport, Tennessee
- Approximately 14,000 employees and 42 manufacturing sites around the globe
  - Technology (R&D) organization of nearly 1,800 employees with over 300 PhD’s
- Serving customers in approximately 100 countries
- A company dedicated to environmental stewardship, social responsibility and economic growth
- 2012 and 2013 ENERGY STAR® Partner of the Year
- 2014 Glassdoor Employees’ Choice Best Places to Work (# 4)
- Combined 2012 pro forma revenue of $9.1 billion

C&E News 2012 ‘Company of the Year’
(vol. 91, p. 27, Jan. 14, 2013)
Eastman: A portfolio of specialty businesses

- Consistent, superior earnings growth
- Leading positions in diverse, attractive end-markets
- Innovative technology platforms
- Management track record of outperformance
Eastman is a market leader of our sales revenue is from product lines in leading market positions.

- Cellulosic polymers
- Insoluble sulfurs
- Aldehyde derivatives / ketones

- Non-phthalate plasticizers
- Hydrocarbon resins

- Copolyester
- PVB sheet
- Branded window film
- Cellulosic polymers

- Acetate tow
- Acetate yarn

- Oxo alcohols in Americas
- Heat transfer and aviation hydraulic fluids

Additives & Functional Products
Adhesives & Plasticizers
Advanced Materials
Fibers
Specialty Fluids & Intermediates
End-market diversity is a source of strength

15% Building & Construction
14% Consumables
13% Tobacco
12% Industrial Chemicals & Processing
8% Durables Goods
2% Electronics
2% Agriculture
8% Other
4% Energy, Fuels & Water
6% Health & Wellness
15% Transportation

Note: combined actual (reported) 2012 revenue from Eastman and Solutia
Building & construction: Leading products in attractive market segments

- **Eastoflex®**: Commercial roofing
- **Vista®** and **LLumar®**: Performance films
- **IQue®** and **EnerLogic®**: Performance films
- **Saflex®**: Advanced interlayers
- **Perennial Wood®**: Insulated glass sealants
- **Piccotac®** and **Eastotac®**: Carpet construction
- **Eastman 168®**: Plasticizers
- **Gila®**: Performance films
- **Texanol®**: Ester alcohol
- **Optifilm®**: Additives for low VOC paint
- **Cerfis®**: Technology
Growth driven by long-term global trends

Energy efficiency

• High energy prices, especially in emerging markets
• Energy efficiency standards driving innovation in transportation and building & construction

Emerging middle class

• Global middle class growing by >70 million people annually, led by Asia
• Urbanization challenges result in more sophisticated building standards

Health and wellness

• Tightening health and consumer protection regulation
• Aging population and rising healthcare costs
A long history of creative thinking and industry solutions

Our history timeline
Eastman’s view on Academic Partnerships

- Thoughts on Open Innovation
- Our partnership model
- Lessons learned
- Implications for Industry – University Cooperative Research Centers (I/UCRC’s)
- Vision for the future
Open innovation

H Chesbrough- Open Innovation: The New Imperative for Creating and Profiting from Technology. Used with permission
Common Reasons for Open Innovation (OI)

- ‘Not all the smart people work here’
  “There’s 1.5 Million people in the world who know about my business. I want them on my team.” Nabil Y. Sakkab P&G

- The ANSWER may be known, just in a different form
  Various intermediaries aka ‘Technology Match-Makers’

- Use others (existing) resources rather than build it

- Diversity – of thought, skill and experience
Practical Considerations for ‘Going Outside’

- Identify **Willing Partners**
- Focus on what each party is good at
  - Application and commercialization – Eastman
  - Fundamental research and discovery – Partner
- Recognition of entire commercialization cycle

*Universities tend to think that the subject of a patent is much closer to market than industry does, and so there is a built-in, significant difference in the perception of value. H Foley RTM Sept - Oct 2012*

- Strict insistence by Universities on controlling IP often leads to US companies going outside the US
External Innovation Vision

Centers of Excellence

Innovation Network
Schools & Relations

Individual Research
Contracts and Consortia

Focus on Fewer, Deeper, Relationships
Eastman Partnership Strategy – An equation for success

- Multi-year, multi-million dollar collaborations with both NCSU and UNC
- Eastman employees located on campus
- Collaborations across at least nine departments and colleges and two universities*
- Over 30 projects underway*
Key Elements of Partnership

- **Master Research Agreement** – blanket agreement that covers key issues
  - IP
  - Confidentiality
  - Other legal terms (indemnity, regulatory etc)
  - Enables starting projects with minimum legal barriers

- **Single Points of Contact**
Creating a Center of Excellence

Selected Top Schools in:
- Chemistry
- Chemical Engineering
- Materials Science
- Other areas of interest (biotech, textiles, coatings)

Considered other factors:
- Department size (faculty and student numbers)
- Grants
- Publications
- Patents
- Impact/quality of patents
Creating a Center of Excellence

- Reduced top ca 10 schools
- Small team conducted site visits
- Further culled list to ‘short list’
- Visited short list w. larger (ca 6-8) Eastman team & subsequent senior management visits
Key Milestones

- First projects funded late 2012
- Eastman personnel relocated to Raleigh early 2013
- Expanded relationship to University of North Carolina in February of 2013
- Additional project funding decisions throughout 2013.
  - Three rounds of Requests for Proposals (RFP’s) resulted in over 30 funded projects
Institutionalization of University Relations
Eastman Innovation Center

- **Stewart Witzeman**
  - Director, Eastman Innovation Center
  - Joined Eastman in 1985
  - B.S. Chemistry
  - Ph.D. Chemistry
  - Post Doctorate Organic Chemistry

- **Barclay Satterfield**
  - Senior Chemical Engineer
  - Joined Eastman in 2013
  - B.S. Chemical Engineering
  - Ph.D. Chemical Engineering

- **Gary Luce**
  - Innovation Manager
  - Joined Eastman in 2010
  - B.S. Chemical Engineering
  - M.S. Chemical Engineering

- **David Norman**
  - Principal Research Chemist
  - Joined Eastman in 2008
  - B.S. Chemistry
  - Ph.D. Inorganic Chemistry
  - Post Doctorate Chemistry

- **Jennifer Peavey**
  - Administrative Assistant
  - Joined Eastman in 2013
  - B.A. English
  - M.A. English

- **Damon Billodeaux**
  - Principal Research Chemist
  - Joined Eastman in 2006
  - B.S. Chemistry
  - Ph.D. Chemistry

- **Jeanette Lucas**
  - Technology Liaison, Eastman Innovation Center
  - Joined Eastman in 1980
  - B.S. Chemistry
  - Ph.D. Chemistry
Eastman Innovation Center – Partners II Building on NCSU Centennial Campus
The path to a project

1. Work internally on a problem statement
2. Distribute broadly to partners
3. Workshop
4. Receive and review proposals
5. Select and fund a project

Lots of 1 on 1 conversations

Repeat x 30
Lessons Learned

▪ Physical presence matters
  • Enables quick response time
  • Meeting space with infrastructure
  • Student/faculty interactions
  • ‘Secondary’ interactions

▪ Collaboration matters
  • There’s no substitute for face to face discussions
  • Best proposals developed jointly
  • Connecting groups across campus
What are the Implications for I/UCRC’s?
External Innovation Vision

Centers of Excellence

Innovation Network Schools & Relations

Individual Research Contracts and Consortia
Benefits from IUCRC’s (Gray et al)

- Research Cost Avoidance
- Research Cost Savings
- Stimulated R&D
Why Participate in Consortia (including I/UCRC’s)?

Direct benefits

- Access to unique capabilities and facilities (physical and human)
  - Cost avoidance, cost savings and stimulated R&D
- Access to fundamental information
  - Cost savings, stimulated R&D
- Access to leading edge work in emerging field
  - Stimulated R&D

Indirect benefits

- Network
- Insight into trends and future directions
How does an industrial entity take advantage of these opportunities?

- Participation by the right industrial representatives

- Who is the ideal industrial rep?
  - Technical expert or the research manager?
Plans for the Future

- Expand our network of schools

- Work current partnerships for success as evidenced by:
  - patents
  - publications,
  - product concepts and ultimately commercial products.

- Renew and expand arrangements based on demonstrated success!
Reserved

for the first product originating from the Eastman Chemical Center of Excellence