

AC 2010-915: DEVELOPMENT OF A SALES ENGINEERING PROGRAM BY COLLABORATING WITH INDUSTRY

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Development of an Engineering Sales Program with Industry

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Abstract

Iowa State University recently established a program in technical sales for engineers. To develop the program, faculty and administrators reached out to an industrial advisory committee comprised of organizations with a vested interest in the program; the organizations that hire students from the College of Engineering for career tracks in technical sales and marketing.

The instructor used a combination of various sales techniques and strategies, from established technical sales programs to frame the syllabus for the course. A detailed course structure, with an associated lesson plan will be presented. A review was conducted of peer institutions with similar technical sales engineering programs included the University of Florida, and Penn State Erie - The Behrend College.

Keywords: technical sales, sales engineering, industry collaboration

Description of the Innovation

The Iowa State University College of Engineering (COE) received a corporate gift from Trane corp. to establish an engineering sales program within the college. The original gift proposal initiated a review of sales and marketing positions for engineers, sales engineering programs at other universities, and a literature and industry review of sales engineering curriculum. These activities were performed by a committee established within the Industrial and Manufacturing Systems Engineering department (IMSE).

Review of Sales and Marketing Positions for Engineers

The committee conducted a review of sales and marketing postings within the COE, on the number of advertised positions that had Sales or Marketing in their title or description, as well as the number of graduates with Sales or Marketing in their job title. It was interesting to find that while nearly 15% of job postings indicated Sales or Marketing functions, that only around 1% of post-graduation job titles included Sales or Marketing. This difference is attributed, in part, to the fact that many students are not reporting their job title to career services, and also that it is likely that a sales or marketing position within engineering, may neglect to include the terms Sales or Marketing directly within the job title (i.e. Applications Engineer, Support Engineer, Field Services Engineer, etc.)

Based upon Engineering Career Services (ECS) statistics:

- 66 grads that have marketing and sales in their job title out of approx. 7000 grads (over 10 years fall 97 -07)
- 15 percent of jobs postings have marketing or sales in their description; 61 sales, 39 marketing (100) out of 594 postings in Nov. 26, 2007

Companies that were hiring engineers for these positions included those in the following industries.

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| • Consulting | • Industrial Tooling, Machines, Automation, Manufacturing |
| • Industrial/Agricultural Equipment (graders, tractors, etc) | • Transportation |
| • Systems Integrators | • IT Services (Technology) |
| • Industrial Chemicals and Supplies | • Energy/Utilities |
| • Contractors and HVAC Suppliers | |

The Industrial Engineering committee reviewed the companies that were hiring COE graduates for sales and marketing positions. Prior ISU graduates at these companies, or companies in similar industries, were asked to participate on an engineering sales advisory board which would assist in developing the curriculum for the course. The industry advisory board, selected by the committee, included representatives from the following companies:

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|--|---|
| • ABB (Industrial Automation) | • JB Hunt (Transportation & Logistics) |
| • Caterpillar (Industrial Equipment) | • JS Kruger Consulting (Construction) |
| • Genesys Systems (Systems Integrator) | • Lincoln Electric (Industrial Equipment) |
| • Hercules (Industrial Chemicals) | • Trane (HVAC) |
| • IBM -retired (IT Services) | |

Literature Review of Sales Engineering Programs

A preliminary literature review was conducted for the development of sales engineering programs. The need for engineers to develop sales skills and for engineering curriculum to include marketing and sales courses has been defined [1, 2]. Higley et al. provided some insight into developing an engineering technology program at the 2009 ASEE conference [3] and Dunn presents a survey study which exhibits the perceived importance of such skills in undergraduate programs [4].

The review uncovered many sales programs with a technical emphasis, outside of the engineering programs taught at universities. With the exception of the popular Dale Carnegie and Sandler Training programs (Sandler being more technically focused), the majority of these formalized programs are being offered by technical companies internally, such as IBM, Trane, ABB, and many other large technical companies. In the case of IBM and Trane, these programs involved formalized classroom training that lasted from 6 months to a year.

Sales Engineering Programs at Other Universities

The search for engineering sales programs at other US Engineering universities, uncovered sales minor programs at the University of Florida and Penn State Erie – The Behrend College. In both of those cases, the sales programs were essentially a collection of business courses that could be taken along with an Engineering Economics course in order to qualify for a minor in sales. The business courses listed in their minors consisted of Marketing, Finance, Accounting and Sales. Only in the curriculum at Florida, was there a specific sales course offered in the engineering college; listed as a 1 credit sales seminar.

Course Development and Deployment Process

The Sales Engineering Committee, along with the new Engineering Sales Advisory group, met and developed a weighted curriculum recommendation. An importance scale was developed (0 = not important, 9 = critical importance) to assess the topic value and determine the number of contact hours which should be dedicated to the topic (Table 1). The total contact hours were 93.4, so these would need to be normalized to the standard 45 contact hour semester schedule at ISU if it was directly applied to a syllabus (which it was not).

The Engineering Sales course was subsequently assigned to Dr. Dave Sly, a lecturer with a PhD in Industrial Engineering and an MBA, who had formal sales training with Dale Carnegie, and who developed and ran a technical sales organization for over 20 years to sell engineering software globally. Dr. Sly then took the spreadsheet and created two engineering sales courses (Technical Sales 1 and Technical Sales 2).

Along with the creation of the Sales Courses and subsequent Minor in Technical Sales, the IMSE department assisted with the launch of a new Engineering Sales Club. The Sales club had a great first year, with special recognition to their excellent executive team that was led by Jesse Dodds. The club has 95 current members and conducted two events a month with approximately 25 to 30 members attending each event. Speakers at their events included Hercules, Lockheed Martin, Genesys, Fisher Controls, Insight Technologies, Trane, TechAir and Eclipse. In addition, the club took field trips in the Fall and Spring to visit the Trane sales training program and the Genesys systems engineering group.

Technical Sales 1, which had a prerequisite course in Engineering Economics, involved the development of the student to perform technical sales activities, whereas Technical Sales 2 involved the development and management of a global, multi-tiered, technical sales organization.

The focus areas for Technical Sales 1, involved:

- The Selling process, and Needs/Requirements Analysis
- Relationship Building and Listening Techniques
- Written and Verbal Persuasive Communications (focus on RFP process)
- Technical Product Pricing and Marketing (and new Technology Introduction)
- Negotiation Strategy and Time Management Skills
- Financial Justifications and ROI

The focus areas for Technical Sales 2, involved:

- Market Analysis
- Strategies for New Technology Introduction
- Multi-Level Sales Organizations (working with distributors)
- Managing Sales Teams and Compensation Systems
- Technical Product Marketing (and new Technology Introduction)
- Global Sales
- Governmental Sales

Table 1. Sample of the Importance Sorting Procedure

Topic	Explanation	Number of Class Periods (Average)	Number of Class Periods (St Dev)	Importance Score (Average)	Importance Score (St Dev)
Teamwork		not scored by all	5.0	5.0	3.7
Market analysis	Introduce how to scope and define potential markets, customer segments and types of buyers to develop the most effective sales approach for each market/customer combination. If Marketing 340 is a requirement, this should be covered at some point there.	7.8	2.7	7.0	3.5
Understanding Customer's needs/ end use of goods or services		6.5	2.1	7.5	3.0
The selling process	The overall process of sales including relationship building, decision points, requirements, and solution building	6.0	1.4	9.0	-
Hands on selling	Opportunities for students whether it be internships, on campus organization, ride along programs. This will be helpful (required?) before the second SE course.	6.0	3.2	8.0	2.2
Ride alongs	1) Exposure to dealer and customer. Learn the role that the manufacturer and dealer play in supporting customers business. 2) Understand value selling and customer needs. Customers are conscious of their owning and operating expenses and will partner	5.5	1.9	7.5	3.2
Requirements gathering	Specification / RFQ review, defining of requirements, manufacturing / service constraints (in-house, outside vendors and contractors), quotation and proposal preparation / submittal	4.8	0.8	6.0	3.5
Financial decision process	Engineering economy including time value of money, investment options, taxes, depreciation.	4.6	1.7	7.3	3.1
Pricing strategies	Determine when to use a value added approach vs. a commodity approach and when to sell on a direct basis vs. through distribution	4.6	4.2	6.1	3.6
The structured sales call	The elements of a sales call, from building rapport to presenting a solution	4.4	2.6	5.1	3.8
Logistics & Supply chain	Expand production and inventory management concepts to broader supply chain issues (customer service, order processing, inventory management, transportation, collaboration/communication, information technology, etc.). Help students gain an understanding	4.0	0.7	3.6	3.2
Communications: presentations	Presentation skills including with and without Powerpoint, identifying your audience (e.g., engineers, managers, others), effective use or nonuse of technology, data integration, detail level considerations (based on audience)	3.8	2.0	6.4	3.2
International exposure, Cultural issues (cross borders, buying models)	Selling in other countries, cultural differences, dealing with multi-national companies and cross border issues	3.8	1.5	3.9	3.0
Finance and Leasing	1) Learn the tools needed to support customers in large capital equipment purchases. For example, renting equipment, rent to own, lease, buying points down, and trading in equipment 2) Understand dealer and customer risk & solvency in purchasing equipment	3.4	0.9	6.7	3.4
Legal & contracts	Terms & Conditions of sale, export control laws, Sarbanes-Oxley (SOX) compliance, liquidated damages, indemnifications, risk reviews, insurance, local and national governments	3.4	0.9	4.1	3.4
Purchasing strategies	Understand what purchasing agents know making you a more effective negotiator and solutions provider and ultimately their preferred partner	3.4	1.7	3.6	2.5
Communications: verbal	Verbal and nonverbal communication skills including active listening, asking appropriate questions, phone and technology etiquette	3.2	1.6	7.3	2.9
Communications: written	Written communication skills including identification of your audience, determining best means of communication, practice with different writing needs including emails, memos, letter, proposals.	3.2	1.8	6.1	3.6
Simulation and modeling to support sales	Introduce concepts of applying a stochastic model of the proposed solution in action to help sell the product/service. Simulation can show the range of expected results and decrease skepticism around the viability of the proposal. Animation is a useful	3.2	1.8	2.3	1.0
Environmental	Understanding environmental impacts of customer decisions and how you can address that	2.6	0.9	4.6	3.5
Sales management including compensation systems	Introduction of management strategies for technical sales engineers. Some discussion of compensation systems utilized.	2.4	1.5	3.6	3.9
Cross boundary selling	effectively selling in a region when the ultimate decision makers reside outside your territory	2.4	0.5	2.7	1.9
Selling higher in the organization	Ability to identify the true decision maker and methods to effectively communicate with them	2.2	0.4	4.9	4.0
government sales	Understanding how the decision process in government organizations	2.2	1.1	1.6	1.4

The topics of "hands-on-selling" and "ride-alongs" identified by the Industry Advisory group could not be effectively implemented in the course design for logistical reasons. In exchange, the Technical Sales 1 course involves between 6 to 10 in-class presentations by professionals that are successful in Technical Sales. These professionals are synchronized with the course syllabus, such that they are able to reinforce the specific material being taught around the time they are speaking. In the Technical Sales 2 course, students are required to individually be assigned to a specific company which they present to the class (every two weeks), and attempt to improve, that company's sales organization to the other students in the class. Therefore, the final project for students in the Technical Sales 2 course is to design an improved process for part of that sales organization's function.

Another element of the structure of both courses is the addition of inter-student role-plays. For the role-play scenarios, students are teamed together (either 1-on-1 or 2-on-1) to experience and practice specific elements of the sales process (i.e. relationship building, addressing objections, closing strategies, negotiation strategies). The role-play scenario has also been incorporated into a significant portion of the second exam, whereby the students break into teams and grade each other's presentation on a 12 part rubric, Table 3.

After developing the course syllabus, Dr. Sly reviewed approximately 10 different books (from the many that are available on this topic) to select one with a textbook format and an emphasis on business-to-business technical selling. He eventually selected the main textbook as "Mastering Technical Sales" by Care and Bohlig, and a supporting text called "Close the Deal" by Deep and Sussman which contains over 100 industry examples which support the Sandler Sales methods. Very close choices on the list were the classical texts from Dale Carnegie, "The New Strategic Selling" book by Miller/Hieman, and "Making the Technical Sale" by Greenwald and Milbery.

In addition to the development of the two Engineering Sales courses, the IMSE department has also developed a new Sales Minor which is anticipated to be approved during the Spring of 2010, and consists of five required three credit hour courses. Three of the courses of the Minor are offered by the IMSE department and include Engineering Economy, as well as the two sales courses. The final two courses are Principles of Marketing and Personal Sales which are offered in the Marketing Department within the College of Business (COB). The Personal Sales course is complementary to the Technical Sales courses, in that it is more focused upon the behavioral aspects of the sales process. As compared to the programs offered at Penn State and Florida, the Engineering Sales Minor at Iowa State has five to six more credits dedicated specifically to the topic of sales, with a maximum of six credits assigned to the supporting topics of Marketing and Finance.

To obtain approval for these courses and the minor to be within the College of Engineering, support was received from the College of Business. Approval of these courses and minor was predicated upon proving three key points, and therefore the justifications for those points follow:

1. The material is unique to Engineering students - This was proven based upon the fact that the value propositions and objections handling for the technical sales process requires much more focus than is being taught in a traditional retail sales course. The syllabus does include marketing, pricing, financing, and negotiation material that would traditionally be covered within other business courses.
2. The material is being effectively taught - The COE selected a lecturer who also taught, and was well known and respected, by the COB faculty. This lecturer had also received an MBA from the COB faculty with a Marketing emphasis, and was known to have significant industry experience in Marketing and Sales.
3. The addition of this Minor, and subsequent courses, will provide added value (and therefore students) for complimentary programs within the COB. The Engineering Sales Minor was designed to include from two to three required courses within the COB. The minor was also designed to be complementary to an MBA and Entrepreneurship Minor that is very well attended by graduating students from COE.

Table 2. Syllabus for Technical Sales 1 Course

- Week 1 - Introduction to Sales
 - Mastering Tech Sales (1-Why Sales)
 - Close the Deal (1-Prepare for Success)
- Week 2 – The Sales Process
 - Dale Carnegie Sales Process Framework as applied to Technical Sales
 - Sandler Sales Process Framework within Technical Sales
 - Mastering Tech Sales (2-Sales Process)
 - Close the Deal (2-Master TIPPS)
- Week 3 – Marketing Basics, Lead Generation and Prequalification within industrial accounts.
 - Mastering Tech Sales (3-Lead Qualification)
 - Close the Deal (3-Know your Market, 4-Finding Buyers)
- Week 4 – Identifying Decision Makers and Decision Making Processes within large corporations
 - Mastering Tech Sales (16/14-Executive Connection)
 - Close the Deal (5-Analyzing Buyers)
- Week 5 – Relationship Building, Requirements Gathering and Successful Engagement in large enterprises
 - Mastering Tech Sales (6-Successful Customer Engagement, 8-Dash to Demo)
 - Close the Deal (6-Bond and Build Rapport)
 - Dale Carnegie Gold Book (in Slides section of webct)

EXAM 1 (Written Exam)

- Week 6 – Identifying Business Pain and Addressing Objections Up Front
 - Mastering Tech Sales (5-Needs Analysis, 11/9-Evaluation Strategies, 15/13-Objection Handling)
 - Close the Deal (7-Determine the Pain, 10-Selling in new Millennium)
- Week 7 – Sales Closing Techniques (soft sell) and Post Sale Activities for committee-based multi-tier decision making groups.
 - Mastering Tech Sales (7-Perfect Pitches, 13/11-Sanity after the Sale)
 - Close the Deal (8-Get the Sale, 11-Weak Closing)
- Week 8 – RFQ and RFP Process for Technical Projects (high tech, custom installations)
 - Qualifying RFP's and Evaluating Electronic RFP's
 - Preparing winning RFP responses
 - RFP Strategy
 - Mastering Tech Sales (4-RFP Process)

- Week 9 – Market Identification and Segmentation of High Technology
 - Creating a matrix of product attributes and client requirements
 - Mastering Tech Sales (19/17-Competitive Tactics)
- Week 10 – Midterm Review and Presentations

EXAM 2 (Written and Sales Presentation)

- Week 11 – Financial Justification of larger technical projects
 - Defining economic value and return
 - Creating project cash flows and computing ROI
 - Weighted factor analysis techniques for technical evaluation
 - Developing cash flow analysis and payback comparisons on a unit based method
 - Risk based analysis of pricing strategies
 - Performance based pricing of projects
 - Factoring inflation into long-term projects
- Week 12 – Pricing and Negotiation Strategy
 - Tying it all together into an effective sales presentation
 - Tactics for negotiating with clients
 - Close the Deal (Page 75)
 - Mastering Tech Sales (12/10-Negotiation and Pricing)
- Week 13 – Time Mgmt + Sales Automation Tools (salesforce.com, ACT, CRM)
 - Using sales automation to create accurate sales forecasts
 - Using sales automation to manage accounts based on priorities
 - Mastering Tech Sales (26/23- Time Management)
- Week 14 – Branding and Pay for Sales Engineers
 - Branding yourself
 - Pay plans
 - Organizational structure
 - Mastering Tech Sales (14/12-Getting Started, 17/15- U in Technical Sales, 19-Organizational Structure, 20 Compensation) Note that compensation is only in the old book. I will make a photocopy of this for users of the new book.

Final EXAM 1 (Written Exam)

Table 3. Rubrics for Graded Sales Presentations

Name	Objectives	Excellent 100% ≥ X ≥ 93	Good 93 > X ≥ 83%	Parts Acceptable, but Some Improvement Needed 83 > X ≥ 73%	Needs Major Improvement 73 > X ≥ 70%	Unacceptable 70% > X ≥ 0	X%	Points possible	Points/ 100
Organization and Content		NOTE: If presentation begins 0-5 minutes late, -10 points applied. Presentations beginning more than five minutes after scheduled time receive a grade=0 and must be rescheduled.						55	0
	Logical	Logical flow of information. Speakers stay on task. Transitions between topics are smooth and rehearsed.		Information mostly presented in a logical order. Speakers mainly stay on task but some straying from main points. Transitions between topics are present, but awkward and unrehearsed.		Flow of information is confusing. Speakers tend to ramble. Transitions between topics are jarring or unannounced.		5	0
	Timing	You have a max of 15 mins.	13 to 15 minutes long	11 to 17 minutes long		>17 or <11 minutes long		5	0
	Information & Interest	Identify a pain with the client (they will state a common issue with your product, based on a list you give them). Listen to the client (show that you are listening: take notes, look attentive, ask follow-on questions)	Information prioritized and presented appropriately with respect to inclusion and timing.	Minor instances of too much time spent on less critical topics, not enough time spent on key topics, or key information not included.		Several major instances of too much time spent on less critical topics, not enough time spent on key topics, or key information not included.		15	0
	Desire & Conviction	Your presentation should include quantitative metrics and focus on the most important product attributes for the client. You should test probable hidden objections and address those issues in advance of the trial close.	Combination of enthusiasm and solid engineering information (including problem and monetary impact) presented throughout by all speakers.	Most speakers enthusiastic, and solid engineering information (including problem and monetary impact) presented throughout presentation.		Very little enthusiasm and/or very little solid engineering information (including monetary impact) presented. No case made for project.		10	0
	Attention & Introduction	State the names of the people (at least once). Firm Handshake with eye contact. Look at the business cards. Start with a short intro statement for the group (30 seconds max) which ensures that you will get their attention. Get them to state their roles and interests.	Critical information presented immediately to hook listeners. Listeners told what they will be told in a clear outline that accurately reflects the content of the presentation. Solid case made for project to occur.	Most but not all critical information presented immediately. Case made for why project should occur, but possibly not 100% solid. Listeners told what they will be told in an outline that reflects the general sense of the presentation.		Critical information is never presented up front - only throughout presentation. Weak case or no case made for why project should occur. Listeners never told what they will be told, or are presented with an outline that does not accurately reflect the content of the presentation.		10	0
	Close	Trial close, get affirmation from group of their understanding. Shake hands, state their names.	Critical information reviewed a final time, and listeners told what they were told. Solid case for involvement. Speakers encourage audience involvement through questions.	Most but not all critical information reviewed a final time. Listeners told what they were told. Reasonable case for involvement.		Critical information not reviewed. Listeners not told what they were told. Case for involvement not made.		10	0
Delivery								20	0
	Verbal	Put at least one concept into a manner that tells a story or creates an emotional response.	All speakers very articulate with smooth delivery and good volume/projection. Presentation is neither memorized nor read. No "uhs" or "ums" or other distracting verbalizations. Transitions between speakers and topics very smooth.	Most speakers articulate with relatively smooth delivery and reasonably good volume/projection. Presentation isn't memorized or read, but isn't completely smooth while given from notes. Possibly a few "uhs" or "ums", but not exceedingly distracting. Transitions between speakers reasonably smooth.		Majority of speakers need to improve with respect to smoothness of delivery, volume, projection, eliminating "uhs" and "ums" or any other distracting verbal habits. Most speakers either delivering memorized speech, or are unfamiliar enough that delivery is rough. Transitions between speakers very blunt.		10	0
	Physical Presence	Dress professional for your presentation (as though you were in an interview).	All speakers appear comfortable/at ease physically with own selves and with room/equipment. No shifting of weight, waving of hands, etc.	Most speakers appear comfortable/at ease physically with own selves and with room/equipment. Very little shifting of weight, waving of hands, etc. Possible problems with AV equipment but quickly resolved by presenters.		Majority of speakers appear uncomfortable/at ease physically with own selves and with room/equipment. Excessive shifting of weight, waving of hands, etc. Significant problems using AV equipment.		5	0
	Speed		All speakers have very comfortable delivery pace (not too fast and not too slow) which makes it possible for listeners to stay engaged throughout presentation.	Most speakers have very comfortable delivery pace (not too fast and not too slow) which makes it possible for listeners to stay engaged throughout presentation.		Most speakers talking too quickly or too slowly which makes it difficult for listeners to stay engaged and/or understand presentation.		5	0
Visual Aids (overheads, handouts, etc.)								20	0
	Appropriateness		Quantity of visual information reasonable for timeframe. Visuals support the verbal presentation. Speakers interact with visuals in a natural, well-rehearsed manner.	Quantity of visuals reasonable but could be more or less and presentation could be improved. Visuals mostly support verbal presentation, but minor instance of where visual causes more questions than it answers. Speakers' interaction with visuals is generally appropriate.		Not enough or too many visuals for timeframe. Visuals seem contrived (filler), don't support verbal presentation, or cause more questions than answers. Speakers do not interact with visuals at all, or interact with visuals instead of with the audience.		10	0
	Quality		No spelling or grammar errors. Visual aids easy to see, read, and remember. Enhance overall presentation.	One or two instances of visuals that are difficult to see or read; spelling or grammar errors. Overall quality is good with only minor errors.		Three or more instances of visuals that are difficult to read or see; spelling or grammar errors.		10	0
Response to Questions								5	0
	Response to Questions	Responses to objections at end should be honest, convincing, and most of the time will be responded to in the form of a question to determine the value/validity of the initial question.	Speakers appear equally qualified to answer questions. Answers handled smoothly and appropriately. No attempts to make up unknown answers.	Most speakers appear equally qualified and comfortable answering questions. Answers mostly handled smoothly and appropriately.		Most speakers appear uncomfortable or are unable to answer questions, or a single group member answers all questions. Answers given very distorted, verbose, or don't actually answer questions asked.		5	0
TOTAL POINTS		= Organization & Content + Delivery + Content + Visual Aids + Response to Questions						TOTAL SCORE OUT OF A POSSIBLE 100 POINTS =	0

Effectiveness and Benefits

ISU's Industrial and Manufacturing Systems Engineering Department has recently completed the third offering of the Technical Sales 1 course, and the first offering of the Technical Sales 2 course. In addition, ISU is in the final stage of approval for the engineering Minor in Technical Sales.

In the Fall of 2009 (the 3rd session), the Technical Sales 1 course was held in the Engineering Distance Education room, where the courses were videotaped and offered on-line to 5 students; two of which were taking the course for post-graduate or industry credit. Distance Education students execute role-plays between themselves and with the instructor via video-conference applications such as MS Live Meeting and Skype. Recently, companies have been requesting enrollment for engineers on their staff to take this course on-line (via Engineering Distance Education) to help them better interact with their clients. The IMSE Department sees the Distance Education option for sales engineering as a great growth opportunity.

The past two Technical Sales 1 course offerings had full classroom attendance which is capped at 25 students, due to the extensive interaction among the students, via role-plays, during the course. The Technical Sales 2 course was attended by over 80% of eligible students who previously attended the Technical Sales 1 course. Student registrations for the sales courses come mainly from IE and ME; however attendance has included at least one student from nearly all eight engineering departments. Attendance from students in non-IE/ME departments is expected to increase, as those departments allow the new Technical Sales courses to satisfy technical elective requirements.

The student feedback has been very positive. Table 4 lists all student comments received in the Fall 2009 semester with regards to the applicability of this course to their future career. Combined student ratings for the first three sales course offerings were: 94% Overall Quality, 100% Objectives Met, 99% Textbook Quality and 100% Pace.

Table 4. Student Feedback (all) from Fall 2009

Do you believe what you learn from this class will be useful in your future career?

- Everything as I am in sales
- Yes, I believe it is helping with my improvisation and presentation/speech skills
- Yes, I am not pursuing a sales career, but I will need to present and sell ideas to the organization I work for
- Yes, not just in making sales of products but by selling ideas to managers or other co-workers
- Yes, you will have to sell products and projects as an engineer even though I don't plan on a career in sales
- Yes, it has opened my eyes to a process that I have never thought about. I think it will prepare me for a career in sales engineering
- Yes, I'm leaning towards sales engineering
- Yes, I would like a career in technical sales and this provides an industry look
- Yes, whether I enter the job force in a sales position or not, sales is everywhere
- Absolutely; I'm a sales engineer after all
- No, since I am not going into sales engineering or be a salesperson
- Yes, persuasion is always good, especially in business
- Yes, good selling techniques
- Yes, there is opportunity for sales at almost every company
- Yes, though not in sales, this will be good info to sell myself or a project in work

In summary, based upon feedback from students who have taken these courses, as well as, industry partners who have participated in the development of these courses, the department believes that it has been successful in educating students to the choice of a career in technical sales and how this choice can enhance their prospects of professional success. During the next few years, the IMSE department plans to assist with the transferability of this program to other engineering institutions, with a strong emphasis on distance education for working engineers in industry.

For additional information, please contact Dr. Dave Sly directly at davesly@iastate.edu, or call 515-450-2335.

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Disclosure

This paper has also been submitted for an award at the IIE Annual Conference in Cancun, Mexico, June 5-9, 2010. This paper is only being submitted for an IIE Award Nomination and will not be published in the IIE conference proceedings. Therefore, since this paper has been accepted, the paper shall only be published by ASEE and ASEE shall retain the copyright ownership of this paper.