

Automotive Industry Management

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Abstract

A unique Automotive Industry Management (AIM) program is offered at Colorado State University-Pueblo. The AIM program combines technical and business knowledge to produce graduates for entry-level management in the automotive industry. This program may be a model for producing technically knowledgeable, business savvy graduates for other industries.

Introduction

Many businesses want graduates with technical knowledge and business savvy, but most technical baccalaureate programs include little business education. The CSU-Pueblo AIM program may be a model that others can follow to combine technical and business knowledge and to produce graduates that industry wants. The AIM program combines coursework for basic technical knowledge with a business minor. The AIM program was designed (1) to cover technical knowledge and business knowledge in a reasonable number of credit hours for a baccalaureate degree, and (2) to prepare graduates for the career paths they follow. The model is not without its problems; articulation with community colleges is difficult.

In this paper we first argue that businesses want technical and business knowledge and that, for at least some jobs, businesses would be willing to sacrifice technical proficiency, while maintaining technical knowledge and adding business knowledge. We then discuss how the AIM program has been designed to respond to those needs in the automotive industry. We finally discuss articulation problems with this model.

We distinguish throughout the paper between technical knowledge and technical proficiency. By “technical knowledge” we mean fundamental, theory-based understanding and by “technical proficiency” we mean the ability to perform skill based technical tasks.

What businesses want

For some technical jobs, businesses would accept reduced technical proficiency in new graduates in return for more business education. Since our program is Automotive Industry Management, we begin by discussing the needs of the automotive industry. We then generalize our argument to other industries.

The United States automotive parts and service industry is a multi-billion dollar per year industry. OEM (Original Equipment Manufacturing) companies require graduates who can, after an initial short training program, move into positions such as District Service Manager, District Parts Manager, etc. Aftermarket companies similarly require graduates for positions such as Service Manager, Parts Manager, Sales Manager, Warranty Manager, etc. These positions require graduates with technical knowledge – but not technical proficiency – and business knowledge. These managers must communicate with customers about technical issues and often must supervise workers who must have technical proficiency, but always must consider the business aspects of technical decisions.

The CSU-Pueblo AIM program grew out of a traditional 4-year automotive degree that emphasized technical knowledge and proficiency. In the 1960s, the aftermarket parts industry began to see the need for qualified entry-level managers and salespeople. Companies like TRW and Walker Mufflers invested time and resources into helping CSU-Pueblo design the degree plan; these companies provided in-kind donations of equipment, advisory committee membership, endowed scholarships, etc. In the 1970s, the OEM industry began to recruit the graduates and Ford, Chrysler, GM, Volkswagen, and others also invested time and resources into the program. These industry relationships have continued to remain strong.

The automotive OEM and aftermarket industries have demonstrated that they want graduates with technical knowledge and business knowledge. We speculate that similar needs exist in other technical fields. The computer OEM and aftermarket industries and the consumer electronics industry have similar customer service, warranty, and replacement parts issues as the automotive industry.

For example, at the time we wrote this paper Circuit City was looking for a Technical Manager for Field Service with technical knowledge and business knowledge. Entry-level positions for college graduates open at this time included an Assistant Store Manager at Sony, a Technical Manager of Product Repair Services at Sears, and a Service Support Manager for John Deere. The last job (at John Deere) called for Bachelors degree in engineering, business, marketing or related field required, implying, we believe, that a combination of those areas of knowledge would be attractive to the company.

Design of AIM program

The mission of the AIM program is to prepare students for entry-level automotive industry management careers by providing automotive management skills supported by the business and technical background requisite for success in the automotive industry. This mission differs from both vocational programs and from the approximately nine other four-year automotive degree programs in the US.

The challenge in designing the AIM curriculum is to fit in enough technical courses and business courses, while meeting university requirements for general education and staying with the 120 credit hour limit imposed on all programs by the Colorado Commission on Higher Education. The AIM program includes the following components:

- 59 semester hours in AIM courses,
- 24 semester hours in business courses, including finance, management, accounting, and marketing, and
- 37 hours in English and general education.

The AIM program specifies certain courses within the CSU-Pueblo general education framework, including

- 6 credits of economics,
- 3 credits of statistics,
- 4 credits of physics,
- 3 credits of speech communication, and
- 2 credits of computer information systems.

The following principles lie behind the curriculum design

1. The program should be designed to promote the integration of technical and business knowledge.
2. The technical courses should be designed to provide a management perspective.
3. The technical courses should emphasis breadth rather than depth.

The integration of technical and business knowledge is achieved in several ways. The program is designed so that, in every semester of the curriculum, students learn technical and business knowledge. The upper division AIM classes are designed to integrate those two sets of knowledge.

The technical courses include courses that focus on the automotive parts industry. These courses cover topics such as

- the role and function of various parts delivery entities (jobber, dealer, mass merchandiser, etc.), and their relationships to each other and to business and public consumers,
- software systems used to order, distribute, and manage inventory, and to generate reports for decision making,
- personal selling in the automotive parts industry, and
- regulatory issues and responsibilities in the automotive parts industry.

AIM courses cover similar topics as a traditional automotive, vocational program, but in broader, more inclusive categories. For example, a vocational school will typically divide the car's chassis systems into at least two separate courses on brakes and steering/alignment/suspension, but one AIM course covers these topics.

Most of AIM's technical courses are three credits with a one-credit laboratory co-requisite. Significantly fewer hours are spent in the laboratory compared to other automotive programs, especially compared to vocational programs where technical

proficiency is emphasized. The AIM labs are still important, especially for tactile learners, but the laboratory work is exploratory rather than skill building.

Feedback from industry, employers, and the AIM Advisory Council indicates that a thorough understanding of the basic systems is satisfactory for entry-level managers to make sound business decisions involving technical data, for example, decisions about warranty claims and administration, insurance, customer satisfaction, and service/parts management. Because fewer courses are needed, room is left for business courses.

Articulation difficulties

Since the program is designed to have technical and business courses in every semester, no two-year degree at a community college exactly prepares a student to complete the AIM program in an additional two years at CSU-Pueblo. While some students do transfer from community colleges to the AIM program, they did not usually begin the two-year degree with that intention, and consequently end up taking more hours than the minimum needed.

Students who complete an AAS degree generally need an additional 5 to 6 semesters, rather than only 4, at CSU-Pueblo to complete the AIM degree. Students from a vocational automotive program may find that several of their courses combine to replace only one AIM course because of the way AIM courses are packaged, as described above. Also, lower division community college classes cannot replace upper division AIM courses.

Students cannot complete a business degree at a community college and transfer to AIM because the AIM program requires upper level business courses not offered at community colleges.

We market AIM nationally to technical programs in community colleges, and have offered to develop transfer agreements. We have found that students do not originally know about AIM, but develop interest when they find it.

In January 2003, AIM was contacted by faculty at Kennedy-King College in Chicago, IL, asking for advice on a curriculum under development there. This 2-year program patterned after and mirrors closely the first two years the AIM program. This program could provide a source of community college transfer students.

Conclusion

AIM's mission of preparing graduates for entry-level technical manager positions and AIM's curriculum combining "big picture" technical courses and business courses may serve as a model for other fields. Other industries besides automotive certainly need technically knowledgeable managers; such industries might include computer hardware and software, consumer electronics, and other technical products. Continued strong

industry support for the AIM program and continued successful placement of graduates indicates the model's success in one institution and one industry.

Biographical Information

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