

Major Initiative Examples

Rail Transportation Program

Background

After three successful, six week summer courses in rail transportation (Summer in Finland 2004-2006) and early initiatives related to rail research, a Rail Transportation Initiative (RTI) was proposed with the future goal of taking the Michigan Tech railroad engineering program to a higher level. The initiative was defined as:

- Three years in duration
- Initiative would involve railroad engineering and urban rail transit
- Initiative would be available to students in several disciplines (eventually develop a Minor in Rail Transportation, a Certificate in Rail Transportation)
- Priority in undergraduate level (due to rail industry interest in educated workforce) but rail transportation could expand to graduate student program
- Could involve distance learning/on-line course originating at Tech or transmitted to Tech
- Would include rail related research, scholarships, internships
- Would work with others to obtain funding and support – foundations, alumni, government organizations (FRA, NSF) and others

Strategy

1. **Establish Rail Transportation Program** - Rail Transportation Program (RTP) would be established to host all rail related activities at Michigan Tech and to provide structure to the field for development. Main action would be to create a Director position to build leadership for first two years. Position would be liaison between industry, university and rail board. Position would explore campus wide curriculum development, conduct minimal teaching and perform extensive industry relations and external funding solicitations.
2. **Focus to expand student exposure and participation** – Due to rail industry interest in undergraduates, emphasis was on providing good service to “clients” and increase the visibility of the industry in various ways, such as new coursework, support of Railroad Engineering and Activities Club (REAC) and related activities, development of marketing materials, etc.
3. **Secure long term funding and build resources** – The initiative included development of a long term plan early to set in motion industry and institutional support mechanisms and to investigate potential long term funding opportunities in research, education and outreach.
4. **Perform faculty search** – If successful, the ultimate goal was to perform a faculty search that would solidify the Program and rail related activities on campus.

Program Timeline

Figure below presents the plan and timeline for the initiative. The MTTI funding was requested for Development and Implementation phase in 2007-2009.

Phase:



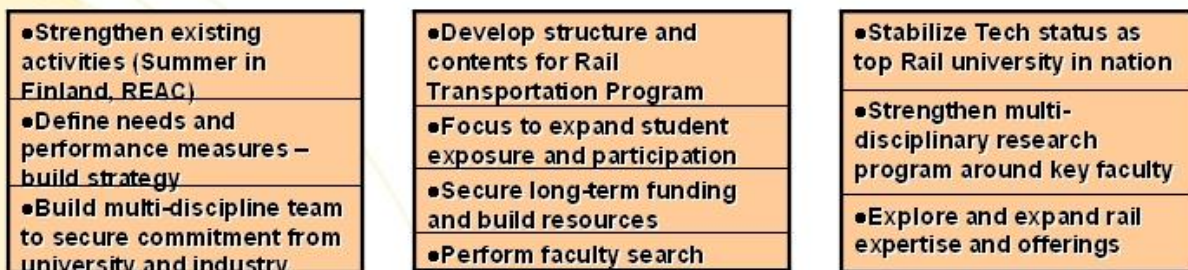
Resources:



Funding:



Objectives:



Funding

Initial funding was budgeted/requested at \$45,000 per year for a three year period, totaling \$135,000. Commitments at Michigan Tech were received from MTTI for \$20,000 per year (\$60,000), from the VPR for \$15,000 per year (\$45,000) and from CEE for \$10,000 per year (\$30,000). Industry was simultaneously approached for similar funding commitment and two annual partnerships (\$33,000 each) with the industry were targeted. While there was expectation that some research funding would also materialize, specific amounts were not included in the initial plan.

External funding far exceeded the expectations. Table below presents the planned and actual funding during the initiative.

Table: Planned vs. Actual Funding

Source	FY08	FY09	FY10
PLAN			
Michigan Tech	\$45,000	\$45,000	\$45,000
Industry	\$66,000	\$66,000	\$66,000
Total	\$111,000	\$111,000	\$111,000
ACTUAL			
Michigan Tech	\$45,000	\$45,000	\$45,000
Private	\$45,000		
Industry	\$66,000	\$128,500	\$131,400

Research	\$291,405	\$155,140	\$212,682
Total	\$447,405	\$328,640	\$344,127
% Above Plan	75%	66%	68%

Budget and Expenses

The main budget item was to cover 50% of the RTP Director salary from the Michigan Tech funding sources, while the other half was going to be covered from the industry. The main target for additional funding was to utilize it toward development of additional educational and research resources and promotional items. As the income above Director's salary hadn't been solidified, no specific dollar amounts were identified for these categories.

Performance Metrics

While no specific metrics beyond the capability to secure the external funding were established in the beginning of the initiative, several metrics were quickly developed to track the progress on the program and demonstrate its performance to clients. Some of the key metrics included:

- Number of students participating in rail related curriculum activities (courses, senior design and research projects)
- Number of student members in REAC
- Number of scholarships won in nationwide AREMA competition
- Annual level of external research funding secured

Progress beyond initiative

The Rail Transportation Program(RTP) has continued its growth since the expiration of MTTI Initiative that got it started. From human resources perspective, the Program Director obtained a tenure-track faculty position in 2012 and a full time senior research engineer (and lecturer) was hired in 2013. The program offers annually three rail specific courses and has typically several externally funded student design projects. Since 2009, there has been xx externally funded research projects that the program has been either leading (or participating in) with total worth of over \$x,xxx,xxx (these are funds directly controlled by the RTP faculty). Since 2012, RTP has also been a member of a federally funded University Transportation Center. To date, faculty and students from seven different departments are (or have been) working on these projects.

Key "ingredients" for success

Looking back, there were several key reasons, why the initiative turned out successfully (if it's considered a success):

- **Building on existing capabilities** – the program had already a good start at the time when funding was requested and it had presented its capabilities for the university and rail industry, making it easier to sell the product.
- **Developing strong and versatile support base** – the program did not rely on a single source for funding, but commitment was inquired and obtained from several entities within the Michigan Tech and the rail industry. MTTI was only portion of the total funding, making it easier to make investment decision.

- **Program, not a project** – the initiative attempted to make progress in multiple fronts. Therefore, a failure in one of the activities would not necessarily bring down the whole program, but rather force it concentrate on another direction.
- **Long term vision and understanding the needs of client** – while the long-term funding and program direction were not fixed, there was an overall vision of the key objectives for the program that matched the highest priority for the client (rail industry) in their need for new talent.

M:\mtti\Executive Committee\Major Initiatives per request 2014\Major Initiative Examples