

# Formative Evaluation of a Hampton Roads Regional Approach to FIRST Robotics

by Bill Piersol, Mike Hajba, Chandra Lyles, and Ed MacDougall

*Tales from the Field, a monthly column, consists of reports of evidence-based performance improvement practice and advice, presented by graduate students, alumni, and faculty of Boise State University's Instructional and Performance Technology department.*

## Evaluation Context and Type

FIRST Robotics is a program with international outreach to produce a positive impact on getting more students involved in Science, Technology, Engineering and Mathematics activities by inviting school children to build robots in local and regional competitions. In 2008, an ad hoc group in the Hampton Roads region of Virginia formed a steering committee and initiated a campaign to regionally promote FIRST Robotics programs. In the fall of 2008, a team of Boise State University graduate students conducted a formative evaluation to measure the merits of the campaign efforts and to give feedback to the Hampton Roads FIRST (HR FIRST) steering committee on the strengths and weaknesses of their efforts and strategies.

## Evaluation Questions and Logic Model

The evaluation team explored the effectiveness of the campaign with the following questions:

- What has HR FIRST been doing?
- How well has it been executing what it wants to do?
- What are the areas for improvement?

After initial analysis of the objectives of the initiative, the team developed a logic model based on HR FIRST goals as shown in Figure 1:

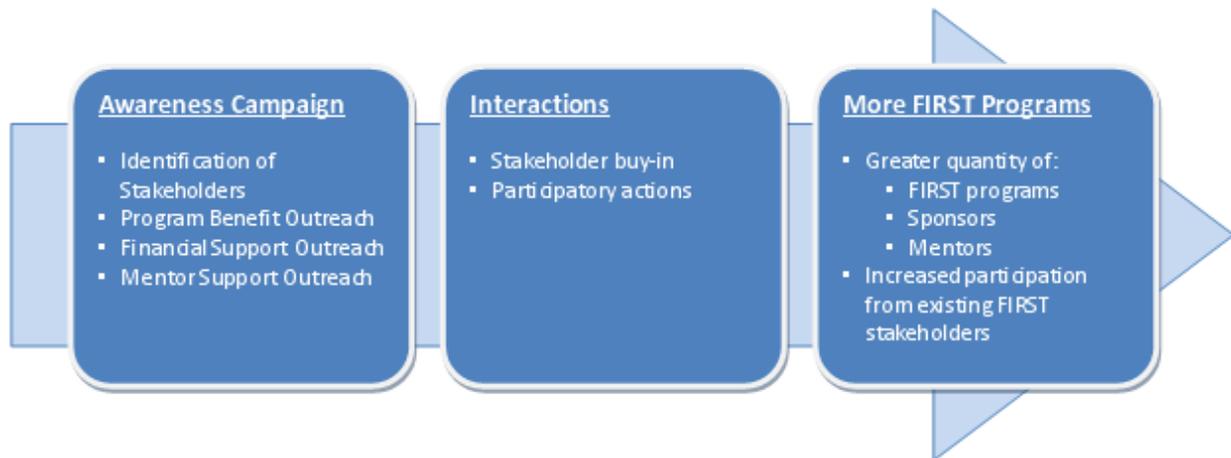


Figure 1. Evaluation logic model for regional FIRST Robotics program.

## Analysis of the Process and Outcomes

Through interviews of HR FIRST steering committee members, it was found that the program had already implemented a structured *awareness* campaign to guide group efforts in identifying and communicating with community stakeholders. Based on a literature review, it was learned that their five-step awareness campaign was comparable to those used by others as shown in Table 1.

Table 1. Comparison of Supporting Models.

<i>HR FIRST Strategic Model</i>	<i>PR Campaign Model (Rus, 2007)</i>	<i>Collaborative Tensility Model (Bradbury, Good, &amp; Robson, 2006)</i>
Awareness	Define Problem	Invitation and Facilitation
Understanding	Research	Learning Space
Commitment	Planning	Aligning Vision and Values
Action	Implementation	---
Results	Evaluation	Benefit

The similarities between the models suggest that planned awareness campaigns have several sequential phases. Understanding these phases guides the actions of steering committee members in their efforts to build relationships and raise awareness. In addition, the model provides a troubleshooting framework if actions or results are deemed unsatisfactory.

Even though the HR FIRST initiative was only six months old and relatively immature, the evaluation team identified positive outcomes which indicated effectiveness in the effort, such as:

- Creation of an information-driven HR FIRST website.
- Multiple awareness meetings were conducted or scheduled.
- Formation of a new HR FIRST school team committed to sending three teachers and thirty students to a FIRST related event.
- The local PBS television station agreed to help with awareness efforts.

In addition to these successful efforts, the results of an HR FIRST steering committee survey indicated that members overwhelmingly believed that their collective efforts yielded valuable results. This outcome will likely serve as a motivational driving force, which would tend to make members continue in their efforts. This continuation could lead to additional success, which would continue to drive motivation. High motivation becomes especially important in volunteer efforts where other tangible benefits may be lacking.

### **Evaluation Conclusions**

The analysis of the HR FIRST program's strengths and weaknesses yielded these findings:

#### **Strengths:**

*HR FIRST has adopted a strong, systematic approach for their awareness campaign. The adoption of a systematic step approach (Rus, 2007) and a synergistic cooperative approach (Dann, et al., 2007) are seen as key parts of successful awareness campaigns.*

*HR FIRST has achieved desired results by its efforts. As a result of this group's efforts, one school has established a FIRST Robotics program, a public TV station has partnered with the program, and several events have occurred that have introduced students, teachers, and other influential stakeholders to the FIRST Robotics program.*

*HR FIRST volunteering steering committee members are motivated and likely to continue these efforts. A survey shows that the HR FIRST committee members overwhelmingly see their efforts, and the results of these efforts, as having exceeded their expectations.*

#### **Weaknesses:**

*This ad-hoc effort will likely need to mature into something more formal if it is to be sustained. While the collective expertise within the committee has contributed to desirable results in promoting awareness, the specific actions that led to these successes are not*

codified within a formal organization. Consequently, as members of the steering committee leave over time, and others join, the volunteers may not realize the same level of success.

## References

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## About the Authors

Bill Piersol is a consultant with Klett Consulting Group, Inc., and can be reached at bill.piersol@kcg-inc.net. He received a master's degree in Instructional & Performance Technology (IPT) from Boise State University. Michael J. Hajba is a trainer at Progressive Insurance and can be reached hajba@sbcglobal.net. Chandra Lyles is training specialist at Weyerhaeuser, and can be reached at Chandra.lyles@weyerhaeuser.com. Edward MacDougall is a Senior Technical Trainer at Casino Arizona, and can be reached at edmacd@elementsofperformance.com. Michael, Chandra and Edward are pursuing a master's degree in IPT from Boise State University.