

Prioritization for an R&T program: tools that help to achieve consensus

To organize all the projects in a large research and technology program requires a group of stakeholders who make up the technology strategy team. The task of this team is to weigh the risks against the rewards and assign priorities to programs in a way that balances all of the R&T efforts and funding.

Having a balanced research and technology (R&T) program portfolio is important both for allocating funds and for maximizing the potential for success. The process should involve all stakeholders, and appropriate tools should be used to facilitate productive discussions. The result should be a consensus on balance and priorities and a commitment to the overall R&T effort.

Here we will outline the process and examine tools that can aid in judging risks vs. rewards. In the next article, we will look at balance in the R&T program portfolio.

THE PRIORITIZATION PROCESS

The starting point is a large number of candidate projects, perhaps 100 or more, that will have been developed through brainstorm sessions. An executive technology strategy team (TST) undertakes the exercise of prioritizing the candidate projects.

It is easier if the 100+ projects are grouped into 15 to 20 larger, strategy-driven *programs*. Special skill services also are grouped appropriately as programs. Exploratory projects also may be grouped into two or three suitable programs.

Prioritizing programs

Programs are prioritized with a scoring system based on “program attractiveness.” The members of the TST agree on the criteria for scoring the program, with a weighting for each criterion and some scoring parameters. **Table I** presents a set of example criteria and weighting factors. An important part of the process is the discussion as those on the team come to a consensus on the score for each program.

Each program receives an overall attractiveness score plus a reward score. Each program also is categorized by “strategic purpose” and designated by a letter as follows:

A. Enable the company to survive (where it should survive).

B. Technical support.

C. Make improvements to maintain or develop sustainable leadership.

D. Reposition the company for sustainable leadership.

E. Build knowledge in strategic technologies.

F. Make improvements to maintain or develop non-leadership business.

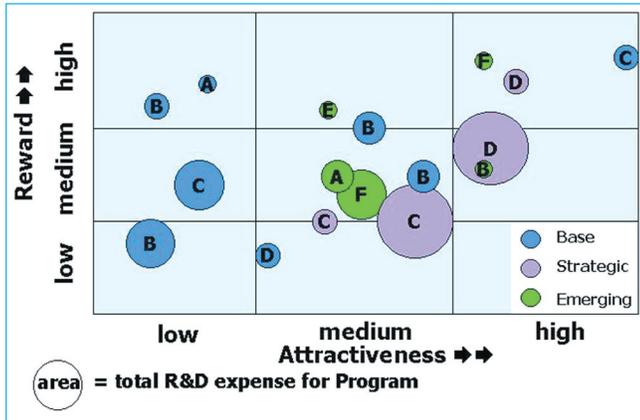
Using charts and graphs

Once each program has been scored on attractiveness and rewards and has been assigned a strategic purpose category, all of the programs can be displayed together on a “bubble chart.” As the example in **Figure 1** illustrates, a bubble chart is designed to present a picture of the whole portfolio. The bubbles also can be sized to reflect the size of an anticipated budget allocation over the funding period.

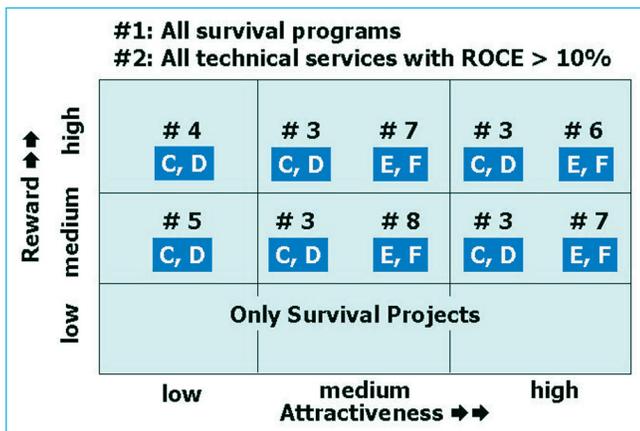
Criterion	Weighting
Strategic fit	10
Reward (return on capital expenditure + incremental profits)	10
Competitive position post project (margin)	8
Competitive position post project (market)	8
Probability of commercial success	8
Environmental, health, and safety impacts	7
Platform for expansion	7
Probability of technical success	6
Potential for R&T spin-offs	5
Proprietary nature	5
Time to first sale	4
Incremental capital at risk	3
R&T cost to commercialize	2

I. Criteria for scoring program attractiveness

Procter is president, Alan R. Procter Consulting, 8075 Pasco Road, West Vancouver, BC V7W 2T5, Canada.



I. Bubble chart for viewing portfolio balance



2. Assigning program priorities

The bubble chart is divided into low, medium, and high zones. The placement of these lines is somewhat arbitrary and need not be considered rigid, since they are merely a means to help make judgments on priorities. Priorities as defined in **Table II** range from 1 to 8. A priority can be assigned to each zone with respect to the strategic purpose for any project in that zone, as illustrated in **Fig. 2**.

A graph of program priorities against a spending budget can also be displayed in a bar chart form, though to use this chart for rigid budget setting is not a good idea. Its purpose is to gain a “feel” for overall priorities.

These charts and graphs are tools that show only principle relationships. As such, they should be adapted to meet the specific needs of the organization.

Priority	Description
1	All survival projects (Strategic Purpose A)
2	All special skill, technical service activities (Strategic Purpose B) that meet an acceptable return
3	All C and D strategic purpose projects that are medium or high in reward and attractiveness
4	All C and D projects with high reward and low attractiveness
5	All C and D projects with medium reward and low attractiveness
6	All E and F projects that are high in reward and high in attractiveness
7	All E and F projects that are high or medium for either reward or attractiveness
8	All E and F projects with medium reward and medium attractiveness

II. General descriptions of Priorities 1 through 8

SUMMARY AND CONCLUSIONS

A number of tools can aid in the effort to judge risk vs. reward. Decisions on program priority and portfolio balance should be linked to the level of sponsorship that the business unit is prepared to make.

This issue of willingness and ability to sponsor programs is one of the most vexing issues for the TST in representing the business unit. The process is easier if the senior executive for the business is a member of the TST and if tools and guidelines are in place to facilitate judgments and decisions. **TJ**

LOTS MORE!

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Course description and registration can be found in the Events section of the TAPPI web site www.tappi.org/public/events.asp or see page 61 for more information and through TAPPI's service line at 800 332-8686 (US), 800 446-9431 (Canada), or +1 770 446-1400.