



STAGE GATE PROGRAM MANAGEMENT—A BASIC DISCIPLINE FOR CONTROL

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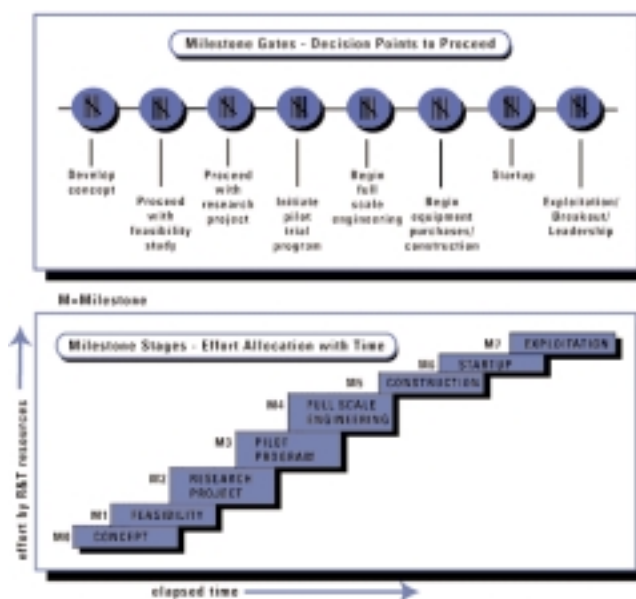
RESearch PROGRAM MANAGEMENT DISCIPLINES ARE important for the individual researcher, the program team and the sponsoring organization to ensure that ongoing management of the research effort is focused, on track, and makes optimal use of scarce resources.

Successful programs for developing and implementing new technology are managed through a “milestone management” process from initial concept to successful startup and exploitation. Milestone stages, which are separated by “milestone gates,” are discrete in their focus, but overlap in a time dimension (Fig. 1).

At each milestone gate, there are decisions to be made prior to the gate being opened to proceed further with the program (or subset project). This go/no go decision point is critical because the further you advance along the project time line, the more expensive it gets, and early identification when a project is unlikely to be successful, for whatever reason, the better it will be for the use of scarce research resources. Activities during each milestone stage are summarized in Fig. 1. Note that termination is an option at any stage of a program or project.

The overlapping time-line for the milestone stages refers to large effort, strategy-focused research programs. Within any research program there normally are a number of subset discrete research projects (projects represent the tactics within an overall program strategy). It is normal that some of the subset projects may be dealing with topics in the preceding or subsequent milestone stage, before a rigorous go/no go decision is made for the overall research program—hence some timeline overlap. With the smaller scope research projects, there is no timeline overlap. It is important that the project leader, who is accountable to the program leader, understands this discipline. The program leader is accountable for the overall program and its delivery to the client sponsor. Projects, which are subordinate to the program, would be expected to turn over quickly and regularly as different tactics and issues are handled. Projects normally do not follow rigorously through all of the milestone stages—they more frequently cover just two or three of the early stages (M0 to M3).

STAGE GATE PROGRAM MANAGEMENT



1. Timelines for stage gate program management

The program team handles the ongoing management of the research program, and is accountable to a business unit technology strategy team or steering group. The program leader must call regular meetings of the program team to review progress, discuss problems or setbacks, make any appropriate changes in direction, set objectives for the next time period (perhaps 2-3 months). The team also would deal with stage gate decisions. Best practices for holding meetings and good team functioning are critical; shareware options also are finding increasing use for remote meetings, discussions, and communications.

A template for milestone decisions appropriate to each milestone gate are summarized in Fig. 2. The template should be considered as a guide only and is adapted frequently to meet specific program needs as determined by the program team. A common failing in program management is the absence of the early

TEMPLATE FOR MILESTONE DECISIONS

■ Tasks to be completed:	■ Decisions to be taken:
⇒ market: • volume, price, competitiveness, meet client need ⇒ operations • operability, maintainability, safety, capital/variable costs ⇒ research • technical feasibility, time/cost to complete, probability of success ⇒ leader • meet goals, team functioning? ⇒ environment • risk assessment and impacts ⇒ sponsor • strategic fit? attractiveness?	⇒ proceed with next stage? ⇒ termination or adjustment? ⇒ identify goals and timing ⇒ funding and allocation ⇒ capital requirements? ⇒ team assignments ⇒ team composition
	■ Forum: ⇒ technology strategy team ⇒ implementation team ⇒ ad hoc committee

2. Technology management tasks, decisions, and questions to consider

people. A good example of this is the recent fascination with totally chlorine free (TCF) bleaching among the research community. TCF pulp has a small and very specialized market—the rest of the market will not accept a product of inferior technical properties at a price premium (the consequences of all known technology for TCF production). This violates the “Compelling Driver Rule,” which states that all technology advances must either improve quality (Q) or reduce costs (C). Hence the Q/C ratio will, like entropy, always increase. It is easy to incorporate this simple rule when evaluating a technology development at each stage gate. The Q/C perspective should be thoroughly discussed by all of the research program stakeholders. TJ

involvement of a marketing function. The perception of what the customer needs and what marketing can sell is frequently misunderstood by research and operating

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COURSE INFORMATION

An 8-week online course, “Managing Technology for Value Delivery,” was developed by The University of British Columbia, Distance Education & Technology (<http://det.cstudies.ubc.ca>). This course is jointly sponsored by TAPPI and the University of British Columbia, and will be next offered from October 2 to November 25, 2000. You may view a demonstration web site at <http://www1.cstudies.ubc.ca:8900/public/RMTD/>

For additional information, contact the course instructor (Procter) at a.r._procter@telus.net or through www.alanprocter.com; or contact TAPPI’s Service Line at 1 800-332-8686 (U.S.) 1 800-446-9431 (Canada), or +1 770-446-1400; Fax: +1 770-446-6947; or by email: serviceline@tappi.org.