R&D Briefing

Prioritising Projects:

Current Issues in Portfolio Management

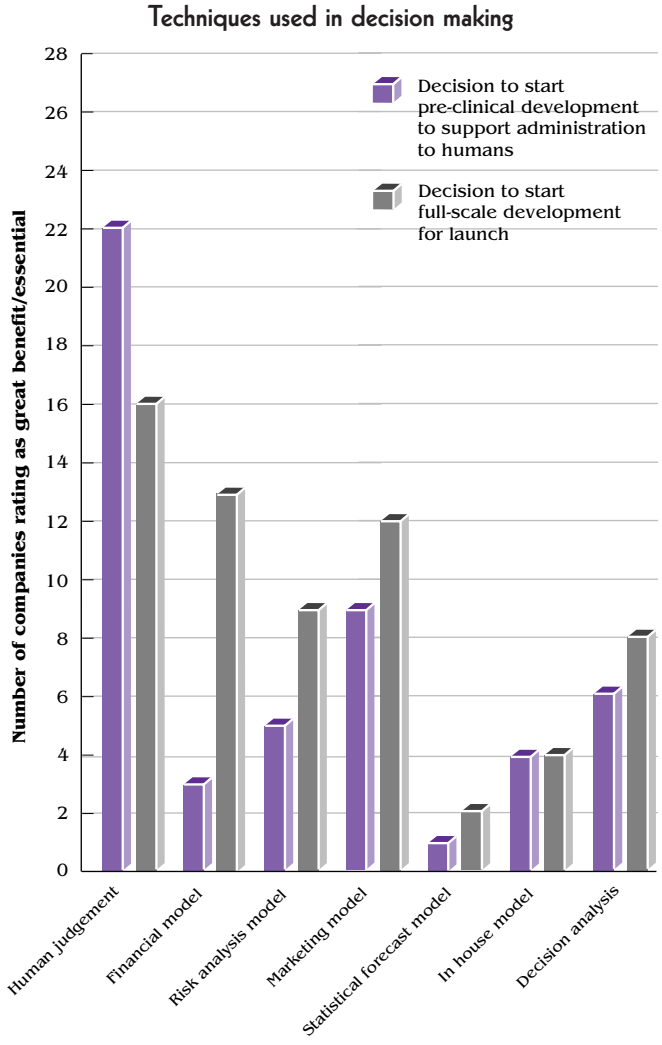

Figure 1 Twenty-eight leading pharmaceutical companies identified a wide range of procedures used for decision making in portfolio management. For example, human judgement is the most popular approach for making the decision to start full-scale development and is considered to be essential by most companies. Such judgement is augmented by various techniques, such as marketing and financial models. Similar approaches are used at other stages of clinical development.

- *Given the high cost of developing new molecular entities and current cost-containment pressures across the pharmaceutical industry, judicious decision making within R&D portfolio management is of increasing importance.*
- *To take advantage of marketing opportunities and of company expertise, disparate pieces of information, from competitor activity to potential sales, are assessed and prioritised.*
- *Which of these pieces are beneficial to the decision-making process? What are the approaches and models most commonly used in pharmaceutical portfolio management? Are current systems satisfactory?*
- *A survey among 28 pharmaceutical companies worldwide, conducted by CMR International to probe these questions, discerned no common approach to portfolio management. A number of different procedures and models are used, often concurrently, with varying levels of confidence and satisfaction.*
- *A subsequent industry discussion meeting identified current issues of concern regarding portfolio management which may warrant further work.*

Perspective

In making the global decision to progress a product, pharmaceutical companies must evaluate and interpret a wide range of information relating to both developmental and financial aspects of each project. To facilitate this, a number of approaches, from human 'gut feeling' to sophisticated modelling, are adopted.

There appears to be no consensus within the industry concerning the best system for portfolio management. CMR International therefore initiated a survey to identify and measure the perceived benefit of current approaches to portfolio management of development projects.

A representative cross-section of the industry, including 12 of the top 15 companies based on R&D expenditure in 1995 (Scrip), responded to the questionnaire-based survey in November 1996. There were 15 European, six Japanese and seven US pharmaceutical companies among the 28 respondents.

Reviewing the Development Portfolio

The frequency of portfolio review reflects the variance in approach between companies. Whereas a few conduct reviews more than four times a year, the majority (79%) do so only once or twice per annum.

Current systems for portfolio management have been developed during the 1990s, with over 60% being operational for less than four years. Established systems are more prevalent amongst the "top" 12 companies; 50% of these have had their system in place for four or more years.

Satisfaction with Current Systems

The present portfolio management system is regarded as satisfactory by 17 (61%) companies, as it provides consistent and transparent information for decision making and fits with company strategy and culture. This is particularly so for the "top" companies, where 83% expressed satisfaction.

Reasons for dissatisfaction range from lack of human resources to undue emphasis on individual projects rather than on the overall portfolio. There appears to be no link between level of satisfaction and the time the portfolio management system has been operational. Indeed, respondents may be dissatisfied with only certain aspects of their portfolio management system, and this may reflect a personal bias.

All, apart from two companies, prioritise projects within their development portfolio using a number of criteria, the most popular being projected sales and unmet medical need, followed by competitor activity in the therapeutic area and technical risk.

The survey highlights a need for accurate attrition data since such information is used by the majority of companies. The main source is past in-house experience although eight companies also use external data, from CMR International, the published literature or the Center for the Study of Drug Development.

Decision Techniques

As might be expected, human judgement plays a significant role at a number of decision points throughout the development process, namely:

- start of pre-clinical development to support administration to humans;
- first administration to humans;
- first administration to patients;
- start of full-scale development for launch;
- registration.

Such judgement is augmented by use of various techniques (Figure 1). The financial and marketing models are frequently used at both early and late stages of development and are generally considered to be of benefit. Decision analysis has gained in popularity and perceived benefit since a previous CMR International survey on this topic (MacFarlane and Walker 1995), being utilised throughout development by up to 11 companies. The use of customised models, developed in-house to meet corporate needs, suggests that there is room for improvement with existing models.

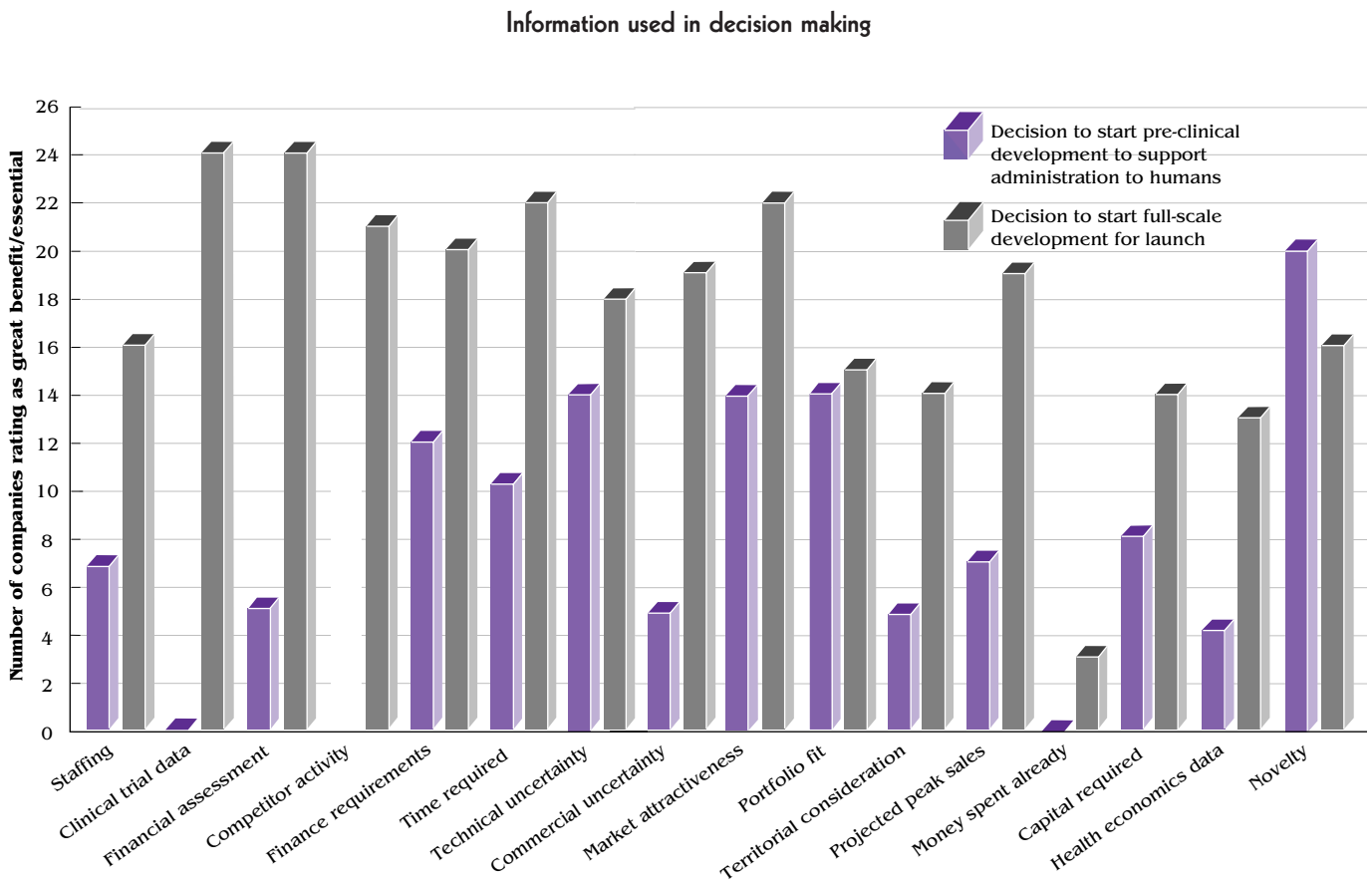

Figure 2 In order to make the decision to proceed with, or terminate, individual projects, disparate pieces of information on each project within the R&D portfolio need to be assessed. At the early stages of clinical development, information on novelty, portfolio fit, market attractiveness and technical uncertainty is considered as most important by 28 leading companies. As development progresses, the information of most benefit focuses on clinical trial data, financial assessment, time required and market attractiveness.

Information used in Portfolio Management

The considerable range of information required for portfolio management reflects the array of parameters that can influence the commercial prospects of a compound. As each compound moves through development there is a shift in emphasis of the information used and its relative value. In the early stages compound novelty is most important. Clinical trial data, sales and financial assessments, and even health economic data assume increasing importance at later stages; competitor activity remains important throughout (Figure 2).

Interests and Concerns

The results of this survey, which reveal a lack of uniformity in approach to R&D portfolio management within the pharmaceutical industry, were the focus of a recent industry discussion meeting. From the resulting list of outstanding issues of concern (Table 1) come several ideas for future work that might be undertaken by CMR International.

Among the suggestions are identification of further inter-company differences in approach, and investigation of whether methods exist for validating or improving portfolio management models. A study of the current probability of new molecular entities moving from one phase of development to another may also be of value.

Finally, it was suggested that CMR International continues to build on its considerable track record, and convene further industry meetings on portfolio management, possibly including representatives from other research-based industries.

Issues of concern in portfolio management

1. What type of data should be included in the portfolio review ?
2. What type of teams/disciplines should be involved in portfolio management ?
3. What models should be used in portfolio management, and can better models be established ?
4. Can human judgement be replaced by modelling ?
5. Should there be a different portfolio review system used for different stages of development, different types of project and different therapeutic areas ?
6. Can the benefits of portfolio management be outweighed by the costs ?
7. How can accurate attrition data be obtained ?
8. How can the accuracy of predictions be improved ?
9. How can portfolio review be speeded up ?
10. How can portfolio management systems be validated ?

Table 1 There are several key issues relating to portfolio management that are of concern to pharmaceutical companies, ranging from the types of data and models that are most appropriate and the composition of portfolio management teams, through to how portfolio management can be improved.

References

Scrip 1996; 2137:10.

MacFarlane FG and Walker SR (1995). Portfolio Management in the Pharmaceutical Industry. CMR Report CMR95-56R.

Copies of the full report, " Portfolio Management by Leading Pharmaceutical Companies: Current Approaches to Decision Making" which contains over 60 pages, 25 figures and tables, and 3 appendices, can be obtained at a cost per copy of:

Non-sponsoring organisations	£500
Sponsoring pharmaceutical companies	FREE

These can be ordered, quoting reference number CMR97-84R from Shaida Dorabjee, Research Services Manager, at Centre for Medicine Research International.

(All cheques should be payable to Centre for Medicine Research International. Non-UK cheques should be in sterling and drawn on a London bank.)

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