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Scaling the Ladder

A thought-provoking tonic on the lighter side

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Please note that these are the personal opinions of the author and do not necessarily represent those of Intelligensys.

Experience of scientific ladders in three companies

In March 2003, Stacey Denenberg, the Business Development Director, Vic Meyer, a founding scientist, and David Chao, the President, all of Akceli (Cambridge, MA, USA) wrote [1]: 'In our opinion, having teams of world-class scientists is an important, if not the most important, source of competitive advantage for biopharmaceutical companies. . . It is our fundamental belief that the top performers in biopharma will be those companies with the ability to recruit an unfair share of talented scientists to their R&D programmes. Accomplishing this will require successful biopharmaceutical companies to focus vigilantly on hiring, retaining and exciting the world's best scientists'.

One way of retaining and exciting scientists is by establishing a separate career path with a series of levels. The status and reward should be comparable with those of senior management and favourably placed in relation to the equivalent posts in academia, thus, allowing creative scientists to remain active in the laboratory without taking on additional administrative functions or being penalized financially. One such ladder currently implemented in AstraZeneca had its origins at ICI, forty years ago in 1965.

Brief history

In the early 1960s ICI, under the chairmanship of Sir Paul Chambers, implemented a corporate strategy to bring the company's technology up to the sophistication and scale of its international competitors [2]. This involved recognizing the achievements of its scientists and 'to attract and retain very able people doing purely scientific work'.

Consequently, in 1965, ICI's Scientific Ladder was created, initially with two rungs: senior research associate (SRA), equivalent to a vice president (managing some 300–400 staff) and research associate (RA) now equivalent to a director (managing some 60–100 staff), with appointments to be made following a demanding selection process including evidence of 'exceptional scientific ability particularly in the generation of original and valuable ideas'. Initially only nine RAs were appointed out of a total workforce of 126,000 employees and it was not until 1970 that the first two SRAs were appointed. It is interesting to note that the average age of the scientists was 44 years (range 35–56 years) and their specialities ranged from chemical engineering and process analysis to polymer physics and colloids [3]. Among the first cohort was a medicinal chemist from the pharmaceuticals division, Roy Hull, well known in academic spheres for his contributions to heterocyclic chemistry and whose subsequent ideas led to the development of the antihypertensive, Tenormin® (atenolol).

It soon became apparent that to maintain such a ladder, it would be necessary to introduce a third rung. Following extensive consultation across the company in 1974 and 1975, especially in the pharmaceuticals division (that had already created such an appointment called senior scientist), a new position called division research associate (DRA), now equivalent to an associate director managing 20–50 staff, was implemented in 1976. One of the main features of the position was that although it conferred a company status, the selection and appointments were made by the individual divisions and/or businesses of which there were ten (petrochemicals, general chemicals, agriculture, plastics, plant protection, organics, fibres, paints, pharmaceuticals and explosives). There was to be no quota for appointments but, for standards to be maintained, a selection process and appointment criteria were recommended. Incidentally it was to this position that I was appointed in 1982. In 1985, there were 84 DRAs, 22 RAs and four SRAs with mean ages of attainment of 37, 43 and 49 years, respectively.

An extensive review of the Scientific Ladder by the corporate scientific succession planning committee in 1990 led to the recommendation of 'globalising the Ladder' and the implementation of a fourth rung 'to facilitate the acceleration of the process (currently 10–15 years) of attaining a position on the Scientific Ladder by providing more structure and thereby enabling better career planning for bright young scientists'.

The Scientific Ladder survived the demerger in 1993 and was implemented in Zeneca with

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an unchanged selection process. In 1997, as part of the introduction of a new research strategy at Zeneca, a comprehensive review of the then current status of the Scientific Ladder in the research function was undertaken. This resulted in the redefinition of the core purpose, roles and responsibilities of the three levels together with appointment criteria, accountabilities and deliverables. Subsequently, the documentation was amended to include the development function although in this case a fourth rung, that of development scientist, was also proposed. Implementation in both the functions was completed just before the announcement of the proposed merger of Zeneca and Astra in December 1998.

Subsequent to the completion of the merger in 2000, a global scientific career pathway for AstraZeneca with three levels: chief scientist, senior principal scientist and principal scientist, was adopted. Claus Wilhelmsson, the AstraZeneca Research Director, announced the first appointments at a special award ceremony at the R&D headquarters (Sodertalje, Sweden) in March 2001. Initially two Chief Scientists and 23 Senior Principal Scientists (including myself) were appointed out of a total workforce of 60,000 employees with a further three Chief Scientists and 29 Senior Principal Scientists in the following three years. Principal scientists, equivalent to the DRAs, are still appointed by the individual functions.

Personal comment

A thorough analysis of the success and/or failure of scientific ladders is beyond this article and, in my experience of scientific ladders in three companies, there is no definitive answer. A scientific ladder is, after all, a management system set up by managers to manage the aspirations of scientists and as to whether it is successful or not depends on the commitment and expectations of scientists and managers as well as on the company culture. In ICI it was set up primarily for strategic reasons to help progress the company in its application of science and technology. The appointment criteria were demanding, the scientists appointed were exceptional (several were subsequently elected to Fellowship of The Royal Society) and small in number. They were trusted and respected by their peers and, therefore, involved in setting strategy. For instance at ICI, I was personally involved in strategy development even at the highest company level. However, if a ladder is set up primarily for operational reasons to retain scientists then it becomes a simple honour system albeit with financial implications. To some career scientists this might be enough to retain them, to others it will not.

The decision as to whether or not to proceed with a scientific ladder is one that needs a great deal of discussion and soul searching at the outset and must involve management and scientists to set the roles, responsibilities, accountabilities and appointment criteria because this will define the expectations of both sides. Excessive and inappropriate appointments must be resisted otherwise the Scientific Ladder will lose credibility. Probably one the most important of the crucial success factors is that a ladder must be seen by all staff to be a benefit to the company as a whole and integrated with decision making at all levels.

References

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