

Innovation management

Types of Innovation

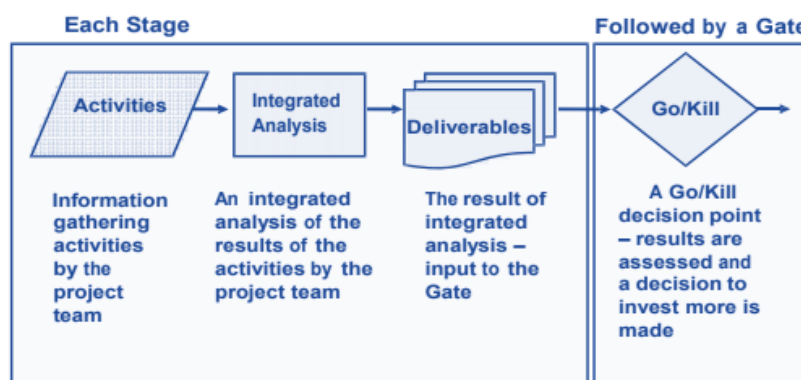
From a value chain perspective, innovations in the agricultural sector may include new food products; new end-uses of agricultural raw materials in the energy/industrial and pharmaceutical industries as well as the nutrition industries; new agricultural inputs including biotechnology and information based technologies as well as enhanced fertilizer, seed, chemical and machinery inputs; new services including enhanced traceability and quality management systems; risk management systems as well as technology forecast services. Moreover, the agricultural sector is rather specific with regards to its governance structures; hence, innovations can also be a result of new governance structures such as contract production, strategic alliances, licensing agreements and joint ventures. Furthermore, regulation plays an important role for the food and agricultural sector. The launch of really new products in the food area can be a lengthy process due to a detailed risk assessment (e.g., it took Unilever about 10 years to launch its functional food margarine Becel pro active). Looking at recent food scandals, the issue of traceability is also special. This holds especially true for the chain of animal-derived food products, where innovations present an input factor for many partners down in the chain. The public sphere also plays an important role for food and agri sector which may hamper the adoption rate of new technologies (e.g. green biotechnology in Europe) or may result in new obligatory production standards (e.g. carbon foot prints as a measure for reducing greenhouse gas implications of food production).

These particularities require a more detailed look at the classification of innovations. A recent study by researchers of the Wageningen University on innovations in the livestock industry argues that one has to distinguish innovations into those improving the quality of production (e.g. reducing greenhouse gas emissions) and those focusing on product quality. Hence the simple distinction of innovations in process and product innovation may not be adequate. How should one classify a product innovation (e.g. improved enzymes to increase the feed conversion ratio in meat production to reduce phosphorous output of animals) that improves the entire production chain of food products?

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At the origin of the innovation project is the development of an idea. Developing a lot of ideas, the right ideas, and truly radical ideas require a set of people, a certain culture, and some would argue a certain governance structure. Once ideas are generated, successful companies will need to have a process or set of procedures to identify those ideas and select the most promising ones. To fulfill this task, big multinationals in the agricultural sector are using the Stage-gate process or some variant of it.

FIGURE: Stage-Gate process



Source: Stage-Gate International, 2008
(www.stage-gate.com)

Smaller companies do not always use a formal process to select and implement innovation. In addition to following a process, clear criteria must be identified to determine what the best ideas look like. Given the particularities of the food and agricultural sectors, are those criteria different or is the magnitude of the criteria different than in the typical management literature. For example, given the long production cycles, the slow growth markets, the traceability and food safety requirements.

Managing innovation is further complicated by the extensive needs and capabilities a company needs to develop a new innovation. In many cases, the capabilities are not all in the hands of one company requiring the leading company to buy other companies and their capabilities or to partner with them. Choosing the right governance structure, choosing the right target companies, successfully implementing a partnership and a merger and acquisition requires skills (RoucanKane et al., 2009; Roucan-Kane and Boehlje, 2009). This process is even harder to complete for converging technologies and/or markets.

References:

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