Chapter 27
Commercial Strategies for Exploitation of Heterosis
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INTRODUCTION
Private firms are attracted to the hybrid seed business because of the built-in plant variety protection of hybrids. Customers need to buy new seed for every planting season. But the breeding, production, and sale of hybrid seed—the commercialization of heterosis—can be successful only if it meets the following criteria: (i) The hybrids must satisfy the needs of the customer for all important traits. Simply to be hybrid, or simply to exhibit heterosis, is not enough. (ii) The price of hybrid seed must be low enough to enable the customer to make substantial profits from annually recurring investments in expensive hybrid seed. A rule of thumb is that a first time use of hybrid seed should enable the farmer to earn an extra profit equal to at least three times the added cost of the seed. (iii) The price of hybrid seed must be high enough to enable the seed company to make substantial profits from its investments in research, production, and sales. A successful seed company needs to realize a 10 to 15% return on equity. Its investments in research—one of the essential business expenditures for a research-based seed company—should be equivalent to 5 to 10% of sales income.

Two other criteria underpin all other requirements for success in the hybrid seed business: (i) Farmers will risk investment in improved seed only when they have some assurance of a fair price—a dependable market—for their crop. (ii) Government regulations, formal and informal, must give minimal hindrance to honest and prudent business operations. These two requirements apply to all seed firms, not just hybrid seed companies. They have particular significance in many developing countries.

DISCUSSION
To satisfy the three primary criteria for success in the hybrid seed business, companies must integrate a host of variables such as: (i) the pollinating system of the crop, (ii) options for manipulation of the pollinating system, (iii) supply and cost of labor for emasculation or other requirements for hybridization, (iv) the yield of the crop in the farmer’s field, (v) the commercial value of the crop per unit of land area, (vi) the seeding rate of the crop, (vii) the seed yield in the seed production field, (viii) the extra yield to be expected from heterosis, (ix) the implications of hybrid uniformity, (x) the most important traits to improve in the crop, and their genetics, (xi) the ease of demonstrating improvements in new hybrids, (xii) availability of inbred parents and other breeding materials in either public or private in-