

technologies that may in fact have had sales. The same is true for several of the 12 market exits in 1989. The relatively low oil prices that typified the second half of this decade also had a perverse effect on a subset of ERIP technologies. Some of the market exits during this period were technologies whose market acceptance was tightly linked to energy prices. Most recently, several market exits have been directly brought about by the nation's recession.

Just as an entry into the market does not ensure continued success, not all exits are permanent. Indeed, ERIP offers several examples of technologies that were withdrawn, redesigned based on initial market feedback, and then reintroduced. Such a pattern is unusual, however. Most of the 129 ERIP inventions with sales have sustained product life cycles. Of the 94 inventions that entered the market before 1987, between 43 and 53 were still in the market by the end of 1990, and between 31 and 37 were still in the market by the end of 1992.¹ These product longevity rates are consistent with Crawford's (1987) observation, based on a review of the literature, that around 65% of new products remain in the market for more than a few years.

3.2.2 Market Entries by Date of NIST Recommendation

Typically, it takes many years for inventions to become market-ready. As a result, one would expect low rates of commercialization among inventors who have only recently applied to ERIP and been recommended by NIST for support. One might also expect the economic downturn experienced between 1989 and 1992 to have dampened the prospects of commercial development for inventions that entered the Program in recent years. On the other hand, as the Energy-Related Inventions Program has gained experience in identifying and supporting worthwhile inventions, one might expect an increasing percentage of ERIP awardees to succeed in reaching the marketplace; assuming all other major factors were constant—quality of applicants, strength of the overall economy, energy prices, etc.

Table 3.3 illustrates that commercialization rates (i.e., percentages of inventions with sales) are fairly steady for the first 300 inventions recommended by NIST for support, with the second cohort of 100 inventions (numbered 101 to 200) achieving the highest commercialization rate, at 35%. The subsequent 257 inventions have been markedly less successful thus far, with commercialization rates that range from 14% (for the most recent 57 inventions) to 19% (for the fourth cohort of inventions numbered 301-400). It is not possible to ascertain what combination of factors has caused the lower commercialization rate experienced by the latest 257 inventions. However, insufficient development time is undoubtedly a factor for at least the most recent cohort.

¹ It is not possible to provide precise numbers of inventions because some of the technologies with sales prior to 1987 did not participate in subsequent ERIP evaluation surveys. Thus, our information is incomplete.