The key need for innovation companies now is talent. There is a large technology and capability gap opening up in the chemical industry where millennials and X generations have not developed the same level of expertise in chemical technology as the Baby-Boomer and older generations did. Despite an overall rise in degrees granted in Science & Engineering since 2000, the degrees awarded in the Physical Sciences are relatively flat. And the numbers since 2000 are even lower than the numbers of engineering degrees awarded in the 1980s. Even from the recent rise in science & engineering degrees since 2000, these candidates do not yet have the experience needed in Chemical Technology to solve the Innovation and New Product Development challenges that are desperately needed today. Innovation capability by a college graduate versus an industry veteran with 15-20 years of experience on top of a college degree, are very different. So it will take another roughly 5-10 years for the recent surge in Science & Engineering graduates to perfect their trade and gain the insight and experience needed for innovation. And availability of this talent pool further depends on how many of these graduates remain in the US working to support the US Chemical Technology industry, as many advanced degree recipients are foreign nationals with temporary residence and they return to their country after they have earned their degree.

Another indicator on the state of innovation in the current chemical industry today. As an example, look at DuPont/Dow. These companies have lost the ability to innovate new products and technologies (poor management and lack of leadership notwithstanding) partly because not enough skilled chemical technologists have come out of centers for higher education (Baccalaureate and Graduate degrees).

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