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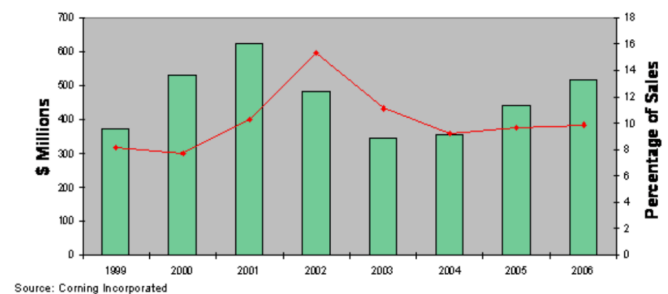
Case 4: Corning

- 1) Corning has survived more than 160 years by focusing on glass and ceramics. Identify the company's key success factors.
 - Corning was able to survive for more than 160 years by constantly reinventing itself. They did this by taking the initiative to broaden their portfolio through joint ventures, creating more business opportunities, and creating new businesses in their development pipeline.
 - Corning spends a considerable amount on research, development, and engineering (RD&E) to keep up with current innovations. According to Corning's bar chart, RD&E expenses were \$520 million with roughly 33 percent of the costs spent on research in 2006. This played a huge part in many of their business ventures as it assisted in compensating for their pain points.

• **Reinventing themselves** was done by:

- Inventing “keystone components” which were implemented into other companies' products; easily scalable (fusion) technology
- Avoiding dependency on a single business
- Investing in RD&E to continue developing innovative products
- Investment in technology and cost reduction for cheaper pricing
- The **broadened portfolio** was done by:
 - Providing diverse (future) options for more business opportunities
 - Forming various joint ventures with other companies
- Corning had **four main market segments**:
 - Display technologies - selling LCD glass substrates
 - Environmental technologies - ceramic substrates for automotive emissions control systems and heavy-duty diesel emission control systems, and particulate filters for diesel emission control systems
 - Telecommunications - optical fiber, cable, and hardware equipment, public and private network applications
 - Life sciences - general lab products, microarray products, drug discovery and genomics, and cell and molecular biology
 - *Other* - semiconductor optics, technical and photonics materials, ophthalmic
- From the four main market segments, they created most of their revenue in display technologies and telecommunications in 2006. The shift in revenue to display technologies

Exhibit 4 Corning Expenditures on Research, Development & Engineering 1999-2006



and telecommunications is obvious due to the popularity of smart devices skyrocketing around this time. Their ability to reinvent themselves to fit with the current innovations led them to their success and survival.

2) Why did Corning constantly form joint ventures with other companies?

- Corning constantly formed joint ventures with other companies to broaden its portfolio and lessen its dependency on a single business. This was to avoid depending on sales that may eventually slow down. For example, they predicted that the use of thin glass substrates in liquid crystal displays (LCD) would decline in sales. To avoid the backlash of declining sales, forming more joint ventures would generate more revenue rather than loss.
- Furthermore, Corning lacked in some areas that would have brought them at a disadvantage.¹ “Corning sometimes lacked the capital, management, and marketing capabilities to take advantage of its research and instead formed several joint ventures” (Bowen, 2008, pg. 3). By creating joint ventures, they were able to utilize their resources while also benefitting from other companies’ resources.
- This led them to have multiple breakthroughs with their business ventures, one of them being research on Organa-silicon compounds which elicited the production of ultra-pure silica glass. Although they made this breakthrough, they lacked the engineering ability and financial resources to manufacture in mass. Due to this, they formed a joint venture with Dow Chemicals and later became global leaders in the silicon market in 2006. From this instance, we can see that a joint venture was a smart move as it had many mutual benefits. With Corning’s extensive funds for research and Dow Chemicals’ engineering and financial ability, they were able to compensate for each other’s pain points.
- Furthermore, huge opportunities arose as new inventions demanded their expertise. This allowed them to not only take advantage of the situation and also widen their portfolio.
- An example of this would be Corning’s joint venture with Thomas Edison and his invention of electric incandescent lightbulbs. Corning’s optically transparent and heat resistant technology was high in demand for this new type of technology, leading the company to become the main supplier for lightbulbs among Edison and his rivals. Due to this, Corning became a major player in the light bulb industry for several decades and gained considerable revenue.
- Another example would be Corning’s and Samsung’s joint venture to manufacture LCD glass for flat panel displays in 1995. Due to Corning’s fusion glass technology of thin glass substrates for LCDs, and Samsung’s huge market, this venture seemed like the right

¹ Bowen, H Kent. “Corning: 156 Years of Innovation.” Corning: 156 Years of Innovation - Case - Faculty & Research - Harvard Business School, <https://www.hbs.edu/faculty/Pages/item.aspx?num=35671>.

investment.² In 2012, Samsung Corning Precision Materials (SCP) had a net sale of 3.1 billion dollars.

3) Should Corning push ahead with all four new businesses? Should Corning re-allocate funding from exploratory research to these projects to generate revenue streams earlier?

- Corning should push ahead with all four new businesses with the lessons from the telecom meltdown in mind. Although not all businesses will be completely successful, with the right amount of patience, research, and innovation, the new business ventures could pivot to success. As Corning stated, their strategy is to grow through innovation and not be overly dependent on a single business (Bowen, 2008, pg. 15).
- The lesson Corning learned from their telecom meltdown shows that they must seek out opportunities that suit their innovation model, stick to their values, invest long-term in R&D, continue diversification in terms of portfolio, and investigate systematic problems of their customers.
- By considering the innovations that would take place, the systematic problems that come with them, and sticking to their innovation models, they could be successful with extensive research. Thus, Corning should not push to generate revenue streams earlier. Doing this would not give Corning enough time to polish these four new businesses for success—and would more likely lead to failure.
- It was stated that most business ventures take about 10 years to flourish and have precedence in current events. Instead of precociously launching their product into the market, they should take it slow to refine any details that could be altered for anticipated events.
- Instead of haphazardly re-allocating funding to their four new business, they should also balance out the costs for this venture to avoid any setbacks. The key is moderation and time. Corning's CEO Wendell Week's stated, "If we fail, we will have nothing behind them and won't achieve our balance goals" (Bowen, 2008, pg. 15). To avoid this situation, they must take into account what they have learned from their crisis with the telecom meltdown. Based on what was stated by Week, I would like to raise the question of why they are allocating their research funds this way. Would it not be better to slow down this venture and take the needed time to innovate and research using less ratio of funds (leading to roughly the same cost in regards to the long-term)?
- Based on what they learned from the telecom meltdown, it is apparent that they must lead their company to constantly diversify their portfolio, thus, giving more of an incentive to push ahead with all four new businesses. Along with investing long-term in R&D, they must also evaluate how their new products suit their customer's needs and the systematic problems they face in the current and innovative world.

² "Corning and Samsung Strengthen Strategic Collaborations." *Corning*, https://www.corning.com/worldwide/en/about-us/news-events/news-releases/2013/10/news_center_news_releases_2013_2013102201.html#:~:text=The%20business%20was%20formed%20as,SCP%20in%20its%20annual%20report.