**Chapter 17 Global Production,Outsourcing,and Logistics**

Making the Amazon Kindle

When online retailer Amazon.com invented its revolutionary e-look reader,the Kindle,the company had to decide where to have it made.Guiding the decision was an understanding that if the Kindle was going to be sucessful,it had to have that magic combination of low prices,high functionality,high reliability,and design elegance.Over time this has only become more important as competitors have emerged.These have included Sony with various readers,Barnes&Noble with its Nook,and most notably,Apple with its multipurpose Ipad,which can function as a digital reader among other things.Amazon’s goal has been to aggressively reduce the price of the Kindle so that it both has an edge over competitors and becomes feasible to have a couple lying around the house as a sort of digital library.

Amazon designed the Kindle in a lab in California,precisely because this is where the key R&D expertise was located.One of the Kindle’s crucial components the “ink”(the tiny microcapsule beads used in its display) were designed and are made by E lik,a company based in Cambridge,Massachusetts.Much of the rest of the value of the Kindle,however,is outsourced to manufacturing enterprises in Asia.

The market research firm iSuppli estimates that when it was introduced in 2009,the total manufacturing cost for the Kindle 2 ran about ＄185.The most expensive single component was the display,which cost about ＄60.Although the display used E lik’s technology,there were no Amerian firms with the expertise required to manufacture a bistable electrophoretic display that sill show an image even when it is not drawing on battery power.This technology is central to the Kindle because it allows for very long battery life.Ultimately,Amazon contracted with a Taiwanese firm,Prime View International,to make the display.Prime View had considerable expertise in the manufacture of LCDs and was known as an efficient and reliable manufacturer.Estimates suggest that 40 to 50 percent of the value of dispay is captured by E lnk,with the rest going to Prime View.

After the display,the next most expensive componet is the wireless card that allows the Kindle to connect to Amazon’s digital bookstore through a wireless link.The card costs about ＄40.Novatel Wireless,a South Korean enterprise that has developed considerable expertise in making wireless chipsets for cell phone manufacturers,produces this component.The card includes a ＄13 chip that was designed by Qualcomm of San Diego.This too is manufactured in Asia.The brain of the Kindle in an ＄8.64 microprocessor chip designed by Texas-based Freescale Semiconductor.Freescale outsources its chip-making to foundries in Taiwan and China mainland.Another key component,the lithium polymer battery,costs about ＄7.50 and is manufactured in China mainland.In sum,out of a total manufacturing cost of about ＄185,perhaps ＄40 to＄50 is accounted for by activities undertaken in the United States by E lnk,Qualcomm,and Frescale,with the remainder being outsourced to manufacturers in Taiwan(China）,China mainland,and South Korea.