After loading a session, the photographer deletes any obviously bad photographs: ones with closed eyes, sour expressions, babies looking away, and so on. After deleting the bad ones, the rest become "base images." She then creates a number of enhancements from those base images. Enhancements range from simple tonal applications, such as black and white or sepia, to elaborate compositions of multiple photos. For example, a photographer might take a group portrait of three children and embed it in a design with three "slots" for individual portraits of the children.

After creating these enhancements, the photographer helps the customer order various sizes and combinations of prints. These include everything from 8″ × 10″ portraits to "sheets" of smaller sizes: 5″ × 7″, 3″ × 5″, or wallet sizes. Then there are the large formats. Customers can order portraits in sizes up to 24″ × 30″, made for framing and hanging on the wall.

After completing the customer's order, the photographer moves on to the next session.

At the end of each day, the studio manager creates a DVD of the day's orders, which she sends to the printing facility.

In the printing facility, hundreds of DVDs arrive each day. (I'll talk about the contents of the DVDs later.) The DVDs contain orders and photographs that need to be printed and shipped back to the studio, so the customer can pick them up. Before they can be printed, however, the final print-resolution photographs must be rendered as images. These print-ready images are immense. A 24″ × 30″ portrait rendered for high-quality printing, has over 100 million pixels, each in 32-bit color. Every single pixel is composited according to the design the photographer created in the studio. Depending on the composition, the rendering pipeline can be anywhere from 6 to 10 steps long. A simple rendering takes two to five minutes, but complex compositions for large formats churn for ten minutes or more.

At the same time, the printers spit out several finished prints per minute. Keeping the printers busy is the duty of the Production Control System (PCS), a complex system that handles job scheduling and orchestrates the render farm, manages image storage, and feeds the print queues.

When the finished order reaches the studio, the manager lets the customer know that she can come in to pick it up.

This workflow partly came from LPS's business context and partly from our choices about how to partition the system. Now let's look at the different facets from Figure 4-1.

Architecture Facets

Reducing the structure of a multidimensional, dynamic system into a linear narrative form is always a challenge, whether we are communicating our vision of a system that doesn't exist or trying to explain the interacting parts of one that we've already built. Hypertext might make