orbweb
Engineering Solutions

Customized Engineering Solutions for the Pathology Environment

1. Company Profile

An extensive background of engineering development in an environment of strict system engineering principles has provided the Orbweb team with the necessary tools to provide quality-engineering solutions. These skills together with experience in the development of IT systems, and direct involvement in the operational implementation of systems equip Orbweb to provide the ideal solution to your individual needs.

The Orbweb team is a unique mix of pathologists and engineers, both with in depth knowledge of pathology laboratory processes and practice.

2. Pathology Industry Experience

Orbweb's experience in the pathology industry includes:

2.1 Laboratory re-engineering

a. Orbweb has been involved in a number of laboratory re-engineering projects.
b. The engineering process applied involved the **identification**, **definition** and **analysis** of all laboratory processes. A laboratory is viewed as a complex system and the interaction of the various components is a key factor in providing an integrated laboratory solution.
c. The re-engineering process focuses on providing an integrated solution, which offers:
   i. The tools needed to **execute** laboratory processes
   ii. Real-time **monitoring and control**
   iii. The provision of **business information**

2.2 System integration

a. Orbweb demonstrated the capability to integrate a variety of systems.
b. Re-engineering is dependent on the ability to integrate with legacy systems (e.g. LIS).
c. The integration process entails the **definition** (Interface Control Documents) and **implementation** of interfaces.

Orbweb has developed a range of **middleware products** to facilitate the integration of laboratory equipment with a LIS. Examples of systems integrated with the LIS include: instrument interfaces, application software (e.g. reporting, courier control, shift management) and labelling.

2.3 Product development

Orbweb has developed a number of products which are deployed in the laboratory environment and are integrated with other laboratory management systems, such as:

a. Courier Control System.
b. Tracking systems for specimens, batches and couriers.
c. Patient result suite (provide pathology results via Internet).
d. Electronic data capture solution.
e. Integrated labeling system.
f. Instrument-LIS interface.

2.4 Complementary technologies

Orbweb has experience in utilizing and integrating a variety of technologies and solutions which can be applied in the laboratory environment, such as:

a. RFID Tracking systems.
b. GPRS solutions and wireless networking
c. Web applications (.Net ASP).

3. Case Study of Lab Integration

3.1 Specimen Tracking
Specimens are tracked between sites by means of barcoded batches. The batch barcode is tracked between sites until it reaches the destination, and is connected to the courier who collects it by making use of one of various technologies (RFID, barcode, bio-reader, etc). Couriers identify themselves on the system when arriving at sites allowing managers and coordinators to track and compile statistic reports on their movements.

3.2 Sorting and routing of specimens
Specimens are placed on an automated specimen sorter once they are delivered at the main lab. The sorter checks the program database for available patient information and reads the barcode suffix of each specimen to determine to which department destination bin it must be routed.

3.3 Pre-processing of specimens
Some specimens that reach the lab may not be correctly labeled and require re-labeling. The barcode label generation system allows users to create and print the necessary custom labels.

3.4 Integration with LIS
Once specimens are delivered at the main laboratory, the program interfaces with the LIS, downloads patient information and uploads the site delivery time and date to the LIS.

3.5 Electronic transfer of requisition data
A requisition form accompanies each specimen, containing the patient and test information. An image of each of these forms are scanned onto a central server and viewed remotely by data capturers who transfers the information onto the LIS.

3.6 Integrated Management System
The integrated management and control system consists of various tools and reports allowing users to trace and acquire statistics of each step in the movement of specimens and lab processes. This is done in real-time, with active warning of process failure.

4. The philosophy of why forming a partnership with Orbweb will greatly benefit your company

4.1 The size, volumes and complexity of pathology firms have expanded at a rapid rate. The expertise to successfully cope with these changes, fall in the ambit of the engineering profession and are not inherent to pathology professionals.

4.2 The pathology industry is unique in its complexities, technology, and human resources. This creates barriers of entry for engineers to get effectively involved.

4.3 Orbweb, with its unique experience and track record in the practice of pathology, is the ideal partner for the forward-looking Pathology Firm whose mission includes excellence.

4.4 Orbweb can add value at various levels. It believes in working as a partner with your company, with the aim to get the optimal fit between your firm and the environment.

4.5 Forming a partnership with Orbweb will have little risk, but with the potential to deliver high gains. Optimal process engineering will reduce time wastage, cost and increase quality, which translates into a competitive advantage.

4.6 Orbweb's long-term survival depends on being a trustworthy partner and adding value far above costs.