Technologies
Solutions Group

VISI-Sponge

August 2012

TSG Company Over-view

Technologies Solutions Group (TSG) is a privately held company with a targeted, diversified, strategic portfolio revolving around supply chain/work-flow automation products. Two years ago we began development and production on 3 proprietary risk management devices and operating suite workflow software, targeting the needs of the healthcare industry.

Over the past few years there has been a driving need for solutions to problems that have plagued healthcare for as long as this segment has existed; The reduction and potential elimination of hospital acquired infections/conditions. These "Side effects" cause over 250,000 deaths and cost the system over $47 billion a year according to CMS reporting.

Our objective is to supply medical devices which will stem these occurrences before they happen while creating a business model which will be self sustaining as soon as these products are presented to the healthcare community.

TSG Medical Advisory Board

TSG's medical advisory board includes a high level group of healthcare professionals in the following disciplines:

- Healthcare insurance
- Malpractice law
- Hospital CFO
- FDA devices
- Board Surgeons
- Infection Control Nurse Practitioners
- CDC procedures
- HHS procedures
- CMS procedures

These professionals advise, critique and help direct TSG in its present and future medical device development.

Additionally they consult on infection control risk management issues as they apply to improved device performance, and improving HAI risk management thus lowering exposure to healthcare professionals.

VISI-Sponge

The Problem:

There are many different types of tools that have been left behind during a surgery. Common instruments are needles, knife blades, safety pins, scalpels, clamps, scissors, sponges, towels, and electrosurgical adapters. Also retained are tweezers, forceps, suction tips and tubes, scopes, ultrasound tissue disruptors, asepto bulbs, cryotomes and cutting laser guides, and measuring devices. The single most common left behind object is a sponge.

The Frequency

The estimate of how often this type of mistake happens is unclear. According to the U.S. Department of Health and Human Services , it is anywhere between 1 and 100 to 1 in 1000. However a study done in 2008 reported to the _Annals of Surgery_ that mistakes in tool and sponge counts happened in 12.5% of surgeries. Additionally, the _Patient Safety Monitor Alert_, announced in 2003 that 1,500 tools were stitched into patients each year.

The Department of Obstetrics and Gynecology at the Eastern Virginia Medical School, reported that it is expected to occur at least once "in every 1,000–1,500 stomach surgeries. An exact count of how often this happens would be impossible to calculate. The _Joint Commission_ on Accreditation for Healthcare Organization (JCAHO) stated that "unintentionally retained foreign bod(ies) without major permanent loss of function (qtd. in Gibbs) are not required to be reported.

Nurses have been discouraged against reporting all errors because of the threat of malpractice and liability issues. Estimates are "undoubtedly low.

VISI-Sponge

The Visi-Sponge system is a complete network based system that allows the hospital to seamlessly track surgical sponges using the latest RFID technology.

Automated count sheets allow for tracking of non-RFID tagged items using font recognition technology. In body detection is possible using a UHF external scanner while all other items can be tracked in real time with easy to use screens. All data collected will marry to back end reports and PDF count sheets for archiving.

Other features such as retained liquid analysis (scale) and operating room procedure data tracking are standard. UHF inlay technology allows us to break the price barrier while maintaining efficacy compared to HF technology.

Visi-Sponge System Features:

- Automatic counts for real time reconciliation
- Redundant technologies to assure 100% accuracy
- Ability to scan multiple sponges
- Unique sponge IDs to reduce duplicate counts
- Reduced biohazard exposure due to RFID enabled kick-bucket
- All product counts displayed and emulated electronically eliminating manual transportation

Visi-Sponge Hardware Includes:

- Toughbook H2 Tablet Display Unit
- Smart Tray for front/backend reconciliation
- RFID Body Scanner
- RFID Enabled Sponge
- RFID Enabled Kick Bucket

Why is Visi-Sponge Different?

- **A Unique product and approach to tracking and monitoring surgical sponges in the operating theatre.**

- **Only product that stresses a "systems approach" when addressing the problem.**

- **We have 4 patent pending products being implemented to create further barriers to entry.**

- **We will be implementing our own sponge lines for manufacturing.**
- **Residual sales include service contracts, support contracts and sponges.**

Visi-Sponge Hand Held Body Scanner imaging the patient prior to closing

RFID Enabled Visi-Sponges

RFID Enabled Kick Bucket

Real-time nurses surgical Visi-Sponge "Tough Book"
for count sheet display and inter-action

Visi-Sponge System Real-time Electronic Count Sheet Screen

TSG Full Healthcare Product Offering

SANI-TRACK
RFID Hygiene Verification and Reporting System

Unique product catering to the latest CDC and OSHA edicts for sanitizing validation and monitoring. Uses existing hand hygiene stations and dispensers, offers minimal infrastructure disruption, benign impact on daily operations and is scalable into employee/visitor access security as a secondary market within hospitals.

VISI-Sponge

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ORxtrack

Established product in hospitals with over 600 Installations. Incorporates bar-coding, RFID, touch-screen and wireless technologies for a completely automated solution and is enterprise based.

TSG Work-Flow Product Offering

Item-Level Tracking in Retail: TSG expects item-level tracking applications in retail to continue to expand rapidly in 2011, as the solution is adopted in new accounts, scaled and expanded in existing accounts and embraced globally. Growth will also be further driven as RFID continues to migrate toward the point of manufacture.

Asset Tracking Applications: Asset tracking solutions will continue to expand beyond just providing the location of an asset. They will increasingly be leveraged to provide more information about the asset—its environment, movements and users—as a means to support and enhance business processes, increase asset utilization, support compliance and minimize costs.

Authentication and Anti-Counterfeiting: Product authentication and anti-counterfeiting applications are anticipated to grow quickly and expand into a broad range of verticals over the next 3-5 years as companies look to create a more secure supply chain. These applications are expected to extend the functionality of existing systems beyond track and trace to protect brands, further improving ROI.

Solution Convergence: Although there may be overlap in functionality and capabilities, the convergence of RFID, barcode and other AIDC solutions will provide the end-user more actionable business intelligence with little disruption to existing solutions and processes. The combination of these technologies will be particularly beneficial for applications and environments, such as supply chain and inventory management.

Mobile validation and tracking: The world has gotten smaller with the advent of the internet and mobile devices that can access it. Portable terminals and cell phone technology is converging like never before which opens up avenues of opportunity for application development not only at a local level but on the web itself. Route management, kiosk applications and direct real time cell phone marketing are areas of tremendous growth in the next decade.

Custom tags, antenna's, and labels: An integral part of any system design is the front end "license plate" where your data resides. TSG personnel are proficient in designing custom label, tags and RFID inlays reflecting application specifications. These products once designed are residual revenue to the corporation for years to come usually professing good margin business since they are custom products.

 Work flow software design: All of TSG front line personnel have had extensive experience in software/application design addressing customers unique workflow needs . Although our three proprietary products are designed to be duplicated and rolled out there is a great deal of revenue available for system design around customer specifications. TSG plans to leverage our skill sets in this area.
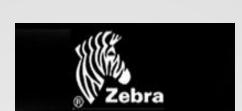
TSG Customers

TSG Strategic Partners

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