

Script – Surgical & Imaging Presentation

Feb 2018

Title Slide:

- Introduce yourself
- Welcome audience to presentation/meeting
- Introduce the Surgical & Imaging business as follows:

“I represent the Surgical & Imaging team within our Medical business. The focus of our group is on solutions for medical devices used in the OR, Imaging, Radiology and Endoscopy fields.”

Slide 1 – Vision

- At TE, our purpose is to create a safer, sustainable, productive and connected future. We innovate and co-create solutions hand in hand with our customers to make the world a better place.
- For our medical business, we work with our customers to make better and safer medical devices for their customers; physicians and patients.
- To achieve this goal, we have a stated vision within our medical business - to become the industry partner of choice for the design and manufacturing of medical devices – thereby maintaining or reaching the status of preferred partner for our solutions.
- We understand that this goal can only be realized by delivering excellence in everything we do for you. We have developed 3 foundations in our business that we believe will deliver on this excellence. They are:
 1. Delivering an extraordinary customer experience, or as we know it at TE, an **ECE**. The concept of ECE is built on numerous conversations with our customers and understanding what matters to you and how we can exceed your expectations. ECE is about you liking our products and how we solve your problems. It's about quality and knowing you can rely on us and our products. It's about getting you the right results when you need them. It's about how we make it easy for us to do business with us.
 2. **Innovation** – at its core, TE is a company of engineers for engineers. Engineering innovation and creativity is at the heart of all our solutions. Comparatively, many peer companies simply “build to print” – this is not our business model. We bring expertise and insight to our solutions. This is where we add value.
 3. Operational excellence – as a partner, we need to be lean, agile and efficient to become your preferred partner. At TE, we operate the TE Operational Advantage, or **TEOA** program. This is a continuous improvement program focused on delivering value to our customers through a relentless pursuit of perfection in our processes by every employee, every day. This program is transforming how we operate as we plan to bring TEOA everywhere within our business.

Slide 3 – TE Medical

Today, the medical business at TE:

- Comprises over 4,000 employees of whom 350 are talented and experienced design engineers – we are experts in our field
- Has scale and velocity – we estimate that 120 patients are treated every minute with a medical device containing a TE technology
- Is proven. We are partners to more than 1,500 medical device companies across the globe – from the world’s largest medical device companies to innovative emerging medical technology companies

TE’s Medical business is built upon a legacy of leading and acquired brands:

- Creganna Medical, a world leading partner for minimally invasive and catheter based technologies
- MicroGroup, a precision engineering partner for advanced surgical tubing
- AdvancedCath, an innovative catheter design and development company
- Measurement Specialities, a leading provider of advanced sensor solutions
- Precision Interconnect – a specialist in fine wire and medical cable assemblies
- AMP – a leader in high end connectors
- Raychem – an innnovtor in material science and medical tubing

Together we are the medical business unit of TE.

Slide 4 – Global Partner with Local Support

As TE, our strategy is to provide a global solution for our customer but to also serve our customers at their point of need.

Our business of medical technology, is often highly concentrated in certain clusters or hubs throughout the world – and where our customers are, TE is.

Some of our sites specifically serve surgical, imaging & diagnostic industries – give a site example; while other serve the minimally invasive devices industry – give a site example

Along with our various sites in the US and our TE Medical headquarters in Europe, TE also has significant operations in low cost and emerging high growth markets. For example, we continue to expand our operations in Mexico and Costa Rica to provide lower cost options to US footprint.

We operate a large facility in Suzhou, China to serve emerging markets and offer a lower cost manufacturing footprint from China.

We also focus our R&D efforts. For example, our R&D facility in Japan is in close proximity to leading developers of endoscopic and imaging devices. Our San Jose, CA facilities operate as Centres of Excellence for Emerging Therapies – right at the heart of innovation in the Valley.

Slide 5 – Medical Device Solutions

For our Surgical and Imaging business we provide solutions in 6 distinct therapy areas:

Electrosurgery – for medical devices used in surgery we enable the application of power sources to the device to cut, coagulate and dissect tissue or organs. For example, stapling and energy sealing devices, powered by energy sources for accurate surgery.

Laparoscopy - for medical devices deployed via laparoscopic or key-hole ports, we augment devices for responsive touch and feel. For example, smart stapling devices that provide real time feedback to the surgeon to enable him/her to sense tissue depth and apply the correct positioning and force for staple application.

Endoscopy – we provide an array of solutions for the endoscopy suite from the integration of visualization technologies for video endoscopes to minimally invasive devices such as catheters and biopsy systems for through-the-scope diagnostics and treatments.

Ultrasound imaging – our imaging solutions are to be found throughout the landscape of ultrasound devices. For example, we provide connectors and cables for high speed and ergonomic sonography and ultra-thin imaging solutions integrated on the tips of catheters.

Electrophysiology - catheter based treatment of AFib has revolutionized care for thousands of people suffering from symptoms associated with an irregular heartbeat. Leveraging our expertise in fine wire, catheters and visualization technologies we are partners to medical device companies changing the face of AFib treatment.

Surgical Robotics – TE provide an unmatched portfolio of technologies, capabilities and services for a wide range of Surgical Robotic applications. From highly engineered tubing for surgical instruments, to imaging cables for visualization and sensors to augment touch and feel, our solutions are to be found through-out the surgical robotics OR.

Slide 6 – Connecting device, physician and patient

While we provide solutions for a range of therapy areas, our expertise has a single unifying commonality.

Our solutions, innovation and engineering expertise **connect the device, physician and patient, making surgery safer, more accurate and precise** – the physician stays focused on the procedure and not the device.

Specifically we work with our customers to co-create devices that deliver:

- Superior **visual detail and clarity** – enabling the physician to plan and perform surgery with more accuracy
- **Connectivity** – we integrate devices, adding connectivity solutions that augment accuracy and precision in surgery. Think plug and play devices that self-configure.
- **Intelligence** – we are making medical devices smarter. We are enabling devices to sense and respond in real time – not just turn on or off. This intelligence benefits the surgeon performing the procedure and the patient by minimizing recovery times through precise outcomes. Together, surgery becomes faster and more cost effective.

Slide 7 – Technologies and Capabilities

As TE we have deep expertise in key processes and component technologies for the medical devices outlined in previous slides and to the right of this slide.

We are vertically integrated – we bring all of these individual solutions together, from design, component manufacturing to device assembly to enable our customers sell winning products.

Some of our core competencies include:

{Note to staff – outline the core competencies that are most relevant to your audience}

- **Metals** - we are metal specialists. Our solutions range from large bore tubing for surgical devices to small flexible tubing for catheters and stamped metal components. Our metal manufacturing is supported by deep metallurgy expertise within our business.
- **Polymers** – accompanying our metals expertise is our polymer capabilities. We provide a range of polymer solutions deployed in devices from shielding of wire and cables to molding of intricate device connectors. We offer particular expertise in heat shrink tubing applications.
- **Fine wire** – we manufacture and assembly fine wire components, creating flex circuits and PCB assemblies. Competence in this area requires a deep understanding of how to handle and integrate fine wires in a manner that deliver on quality, yield and repeatability of process.
- **Assembly** – bringing all of our technical core competencies together is our capabilities in device assembly. We are experts in assembling device for high volume demands.

A good illustrative example of how we bring all of these competencies, technologies and processes together is a direct energy closure device. TE content in such a device can range from:

- The metal shaft, complete with heat shrink tubing outer finish
- Stamped jaws
- An electronic assembly, integrating a sensor and molded deployment handle
- A flex circuit assembled into the device shaft and tip
- A high performance cable and wiring to interface with the power source

Slide 8 – Integrated Solutions

This slide provides a visual representation of TE technologies within our Surgical and Imaging business.

{Note to staff – the image will build from the cable assemblies on the bottom right to the device tips on the top right. The image builds in an anti-clockwise direction. Voice over the image as it builds.}

- Our solutions enable power, data and signal to generate, transmit and feedback along a range of devices.
- Our cable assemblies are custom built to terminate with companion connectors of varying degrees of complexity.
- Our fine wire assemblies integrated seamlessly to our deployment handle technologies – these can range from a handle for a simple mechanical surgical set, to an endoscope's light source connector or a cartridge module in a high end stapling device.
- Along the device shaft we provide highly engineered metal and heat shrink tubing solutions which terminate out to a range of device technologies at the distal tip. For example, fine wire termination on an ultrasound probe, the optical tip of an ICE catheter or simple surgical jaw.

Along this full continuum of device solutions from cable to tip we design, we manufacture and we assemble for the world's leading brands.

{Note to staff. For slides 8 – 13, please use as appropriate when presenting depending on your audience. There is repetition in here so it may not always be appropriate to bring the audience through every single slide. Golden rule applies – know your audience!}

Slide 9 - Electrosurgery

- For bipolar and ultrasonic electrosurgical devices we build, power, sense and connect the device.
- We are the partner of choice to leading providers of electrosurgical devices and we estimate that over 10m+ surgeries are enabled by a TE technology each year
- We work with our customers to make traditional surgical instruments smarter, more accurate and precise.

→ Highlight key devices

→ Highlight key technologies

Slide 10 – Laparoscopy

- Laparoscopic procedures can be difficult for the physician to learn, perform and master. Devices can present a range of challenges in small access sites – limited degrees of freedom of instruments, two dimensional imaging, unstable visualization and poor ergonomics for the surgeon.
- Our solutions seek to address some of these issues. We are adding power, sensing and connectivity to enhance sense, touch and vision for laparoscopic instruments.
- We are successful, having earned the position of a trusted partner to the world's Top 3 companies developing devices for laparoscopic applications.

→Highlight key devices

→Highlight key technologies

Slide 11 – Endoscopy

- TE provide a broad spectrum of solutions for endoscopy. These solutions span the full endoscopy suite from rigid, flexible and single use endoscopes to the devices and instruments that are deployed within those scopes.
- We are fully vertically integrated for the design, manufacture and assembly of endoscope shafts – ensuring our customers benefit from the most efficient solution possible.
- We are a partner of choice to companies in the endoscopy field. 1 in every 4 endoscope video cables globally are provided by TE.

→Highlight key devices

→Highlight key technologies

Slide 12 – Ultrasound

- At TE advancing ultrasound is about two aspects of innovation and engineering.
 - Firstly, improving resolution quality so images are sharper, transmitted faster and in more detail. For example, our high speed imaging cables enable transmission of images up to 4k resolution, helping physicians plan and conduct more skilful surgery.
 - Secondly, our solutions in ultrasound are about providing improved tools – from lighter and more ergonomic ultrasound probes to optical catheter tips that can deliver ultrasound tools deep into the vasculature.
- Our ultrasound cables, including the innovative Comfort series cables are a preferred solution in obstetric ultrasonography– we estimate that a TE technology enables over 300,000 US parents see their baby for the first time each year.

→Highlight key devices

→Highlight key technologies

Slide 13 – Electrophysiology

TE's solutions are advancing electrophysiology devices. We are masters at working with minute and highly complex devices. For example, we regularly assemble devices that integrate conductive fine wire less than 1/3 the size of a human hair.

Leveraging our specialist expertise within the Interventional medical business, we are capable of manufacturing components and integrating complex device assemblies. For example, mapping catheters with up to 64 electrodes.

We are also focusing innovation effort on developing superior catheter connectors in a slim profile. Our next generation catheter connector features up to 272 contact positions in an overall diameter of 1" to include secondary shielding of signals.

→ Highlight key devices

→ Highlight key technologies

Slide 14 - Surgical Robotics

Uncover surgical robotics surgery and you will uncover TE. Our technologies are employed in over 1m surgical robotics procedures each year.

TE technologies can be found in surgical robotic cable assemblies, visualization and imaging devices, instruments and accessories and electrosurgical tools. Our sensors can be found dotted around the surgical robotics OR from positioning surgical arms to monitoring the tools performing surgery.

Our technologies are enabling key device trends that are critical to the development of surgical robotic therapies, including:

- Smaller, smarter devices, miniaturized & mechatronically enhanced
- Flexible actuating devices that mimic human dexterity
- Immersive visualization, high definition images & intraoperative feedback
- Integration of instruments & devices with advanced imaging & sensing techniques
- Sensing - augmenting vision & touch, fusion of information from a range of sensors for high accuracy surgery

→ Highlight key devices

→ Highlight key technologies

Slide 15 – close out slide

Please use this slide at the end of your presentation.

Open the floor to questions.