



Medtronic International Ltd

Company: Medtronic, Inc.

Industry: Medical Technology

Department: Surgical Technologies

By Kyaw, Soe Hein (A0103612Y)

This report describes the student's Roles & Responsibility in the Department. Moreover, how the student add the value to the Department' purposes will be reflected in detailed manners. Most importantly, how the NUS B.Tech education contributes to student's endeavors and effectiveness in achieving Department's Purposes.

REPORT 4 – The Student

TG3001 – Industry Practice

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Prepared for: A/Prof Tan Kok Kiong

The Student

By Kyaw Soe Hein, 3rd Year B.Tech (Electronics), National University of Singapore

Company: Medtronic, Inc.

Department: Surgical Technologies

Designation: Technical Specialist, ENT, Cranial and Spine

Business: Medical Devices and Therapies

Industry: Medical Technology

Abstract

As a Bachelor of Technology (Electronics) student, the value of knowledge gained from National University of Singapore has significant impact on the student's work-life. Starting as fresher Poly graduate in the market, it is undeniable that NUS education during these years contributes on the confidence & the ability of the student to perform the roles & responsibilities in the work place. It could be said that B.Tech program set the mindset of the student how to become more observant and more analytical, here in this report, all these value-added benefits of NUS education will be discussed. Nevertheless, the roles & responsibilities of students are also described along with the economical values of student to the company.

Roles & Responsibility in Department

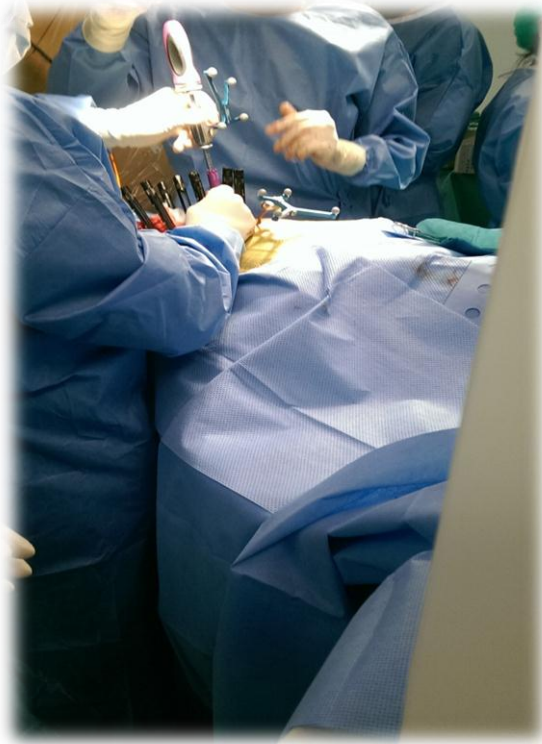
The student is designated as Technical Specialist under “Surgical Technologies” department. Regarding the products & services of the department, it is already described in previous REPORT#3- The Department. Therefore, here, roles & responsibilities will be laid out as below.

- Providing Pre/Post sales activities, customer technical support and relationship management
- The job scope consists of 30% education work and 70% technical products knowledge support for (Ear, Nose, and Throat surgery), Neurosurgery, Navigation and imaging.
- Act as the centre of technical knowledge for all products in Surgical Technologies.
- Support distributors in ASEAN installing and commissioning of equipment and liaise with technical, centre, end users and distributors.
- Clinical cases support in surgery with surgeons and support marketing & sales activity.
- Deliver in-service and applications training at hospitals, seminars or whichever such activity of the sales cycle.
- Support hands-on workshops in ASEAN.

The student is reporting under Business Division Manager and the work related activities are all revenue generated. Clearly, there is no engineering department or servicing workshops in the company. Therefore, the role of Technical Specialist is not limited to technical servicing, troubleshooting but also providing technical knowledge & products expertise for the sales & marketing activities. For a successful deal closing, the Sale Representative, Marketing Specialist & Technical Specialist have to liaise, co-ordinate and support each other as all are needed in every phases of the Sales & Marketing activities.

. To be precise, the main revenue channel for the technical specialist is from the Service Contracts under which these activities are provided by the student to hospitals – troubleshooting of the system, in surgery support to surgeon, servicing & repairing as needed, education & training to hospitals staffs.

Both Capital equipment & disposables items are consigned under both Sales & Technical Team, therefore managing the consignment items, distributing and billing is also part of the student activities. During the surgery, the surgeons will use the instruments & items such as drills, needles and reflective sphere; therefore, replenishing stocks & provides support to OT management concerned with the Medical systems in place.



During Spinal Surgery, the student was supporting Surgeons on using Navigation System offered by Medtronic, Inc. Surgical Technologies Department.

Dealing with several calls from hospitals and provide them with technical knowledge on the line or often attend the problem personally is the one of the support activities provided by student. Explaining & planning out the problems solving activities for the clients is the main scope in the field.

When there are Demo trials of the systems for marketing purpose, it is the job of Technical Specialist to deliver the in-service and training to hospitals on how to use the system, attend the surgery cases to transfer the knowledge to staffs. If there is any hand on workshop, product launch in ASEAN, it is necessary to prepare systems and man the booth to attend all the questions and presentation to the surgeons.



Therefore, it is mainly technical support, partly education work and sales/Marketing activities. One could say it is all rounded and extremely ad-hoc. There are some pre plan activities on the calendar, however, there is always some matters to attend to unexpectedly. The active, outgoing and nimbleness are the characters required for this role & responsibilities. Ability to work under immense pressure is the major trademark of this role, as one will be supporting surgery where life & dead really matters and demand zero mistake. That's true that for any question in surgery, the specialists are expected to answer within 3 seconds and must be sure & clearly. Above stated roles & responsibilities and characteristics are performing by the student in great passion with high momentum.

Student's Value-Added Activities to Department

Furthermore, the roles are not restricted to certain tasks as the student is on the track of great performance. With great manners & determination, such value added activities are also offered by the student to the department.

First of all, the handling post-sales customer supports locally as well as pre-sales overseas support for Distributors in Myanmar in technical & clinical aspects are the value added activities to the Department.

Not only limited to “Singapore” region, as student is native Myanmar, the pre-sales support for Myanmar market is performed by the student. Several trips to Yangon & Mandalay cities of Myanmar, surgery case support, system installation and in-service to the hospitals as well as providing technical & clinical knowledge to distributors.

Key activities are contributed by students in Execution of Services processes with regard to all Surgical Technologies Products including SOP, event documentation, troubleshooting flow charts and technical bulletins preparation. Monthly, Planned Maintenance (PM) procedure and testing contents are done, however student prepare the flowchart to ease the process and distribute among the colleagues for easier reference.

Generally, SOPs are wordy and hard to understand by non-technical personnel, sales & marketing, thus, as a contributor to Sales & Marketing, those SOPs are translated to simpler words and shown with diagrams. Moreover, standard performance matrix for each system is also prepared for standardize among all ASEAN technical team.

For upcoming projects- Aquatas , RF laser blade systems and Integrated product consoles, student is taking charge of install based and preparing how to perform testing & commission on these. As these are electronics based implementation, activities such as instruments procurement, system set-up, and training are prepared for the department.

Moreover, student activities are not limited to technical, as a result of extrovert personality mixed, student is customer focused in which understanding the needs and delivering sales target for the department also carried out. During clinical support in operation theatres, it is value added to push sales of disposables items like spheres, drills and instruments to surgeons, hence making money for the department.

Since the student's previous job as testing & compliance, student taking care of regulatory issues and audits for technical teams. Quality control practise and documentation for audit purpose is much appreciated. Not only medical compliance, internal audit such as stocks level and write-off items are also managed through SAP and well-maintained.

Most importantly, playing a role in the department, student is clinically astute – able to handle surgery cases for neurosurgery, Ear-Nose-Throat surgery, and Spine surgery. It is the most value adding activity as a technical specialist. In this way, the support is always there for the products and surgeons rely on the help of support team. Anatomy and surgery technique are also trained to student and use the skills to provide value added service to the customers.



Student (in Blue Scrub Suit) taking the role of clinical Specialist for Brain Biopsy Case in Yangon General Hospital, Myanmar. It is Breakthrough in Neuro History of the country, the first time using Navigation for Surgery.

Last of all, due to excellent analytical and communication skills with the ability to communicate complex technical issues in an easy to understand manner, customers are trained and supported by student. As medical Application software and systems is complex, the medical trained personnel face the difficulty sometimes. Therefore, as a customer focused engineer, it is the role to play by making terms simpler, using simple examples to explain and train the customers. This effort is much needed of analytical & communication skills where relationship handling does the job and do the talking as well.

Contribution of B.Tech Education

As an electronics engineering student of Bachelor of technology (National University of Singapore), the contribution to the department due to the knowledge learnt at school is unmeasurable. It is undeniable that the B.Tech Education has contributed to student career height in terms of knowledge, reputation and experience. Therefore, below attributes are highlighted to strengthen what is so important of B.Tech Education effect on student daily work. They are consists of

- Electrical-electronics principles & usage of test equipment
- Hands on Troubleshooting & Debugging of electronic parts
- System Integration & networking (windows & linux)
- Excellent Communication Skills with Technical Presentation to customers
- Products training- complex terms into simpler terms for non-technical person
- Highly organized with ability to be flexible in any environment
- Multitasking and prioritize multiple assignments
- Awareness of regulatory guidelines & engineering ethics
- Ability to work under general supervision with a high degree of technical and organizational competence
- Ability to function well under pressure and expand effort to meet schedules and deadlines
- Responsive problem solver and action oriented in resolving customers issues and requirements
- Ability to work well in a team environment but can also work autonomously
- Outgoing, confident and friendliness

The reputable university like National University of Singapore has offered the student the extensive knowledge of electronics principles with in-depth analyzing knowledge. Therefore, how complex the X-ray or Navigation machine is, the understanding of working principles are effortless to students. That's the job skills need to maintain & service the machines in detail manners. Any breakdown or damaged parts, the skills required from hands on projects came into use as student participated a lot of circuit debugging and troubleshooting in school projects.

After going through networking and computer communication network modules in NUS, the student is able to explain the underlying theory of DICOM server and communication parts to Manager and clients whom were most impressed by the knowledge. Not only technical aspects, the skills learnt during the product implementation and presentation of ideas to professors has groomed the student into a full-fledged Technical Presenter at work which is very useful for marketing and sales activities on site.



Fig. Student presenting for Innovation & Enterprise modules @ NUS, acquiring presentation skills for technical ideas

As trained by Professors from B.Tech, the student is well-aware of technical terms gap in commoners. Thus, whenever there is complex idea and terms involved, the ability to change into simpler terms is extremely helpful in non-technical environments

Given stress and time scarce issues in the study, it is well-managed by learning experience. Not to be irritated but face it calmly, it is the most important skill for survival at fast-paced work. In any environment, the student is trained to multitask and among them, set the priority right. This problem is very common in studies; three assignments at the same time, choose the top priority to complete first. It is immense importance in student daily work. Working under pressure and meet the tight schedules are well handled as the benefits of training from NUS.

Nevertheless, the B.Tech has molded the student into responsive problem solvers by numerous assignments and exams where high expectation is set. Therefore, all the problems at work are solved in systematic and timely manners, most importantly with best integrity which in fact, as a student of reputable university in the world.

Conclusion

Granting best knowledge and attitudes for work, NUS has transformed the student from inexperienced junior engineer to well-respected engineer at the work place. It is understood that all the experiences and skills acquired at school has bring about benefits to students for his career. The student has performed to his best of ability and still, tries to extend more job scopes whenever the chance is given to pursue the modest dreams of his career plans. Along the way, the value-added activities are practiced and the department has gained more values and benefits from the student.

Best of all, these roles and responsibilities performed by students is resulted in wellness of the patients as a large community. Note to mention that the student job is creating better healthcare for the future; the satisfaction gained from helping surgeons and hospitals is immensely pleasant. Therefore, hereby, personally gratefulness goes to Bachelor of Technology (Electronics) Department, National University of Singapore and its caring professors for the excellent education offered to the student. To conclude, it is strongly stated that the education of NUS nurtured the student to become better respected & more knowledgeable engineer at the work place while contributing to the healthcare of society in much appreciation at its best.

“All my endeavors & success so far; upcoming greatness is not possible without the Education furnished by NUS (B.Tech- Electronics). My sincere respect goes to the professors educating me with extensive technical skills as well as treasurable interpersonal skills.” Kyaw Soe Hein (A0103612Y)

References

- Personal Images on the job
- Medtronic Technical Specialist Key Accountabilities
- Medtronic Surgical Technology Department Products Catalogue
- Medtronic Surgical Technology Department Products Training (Internal)
- <https://www.youtube.com/watch?v=NJY-eC8DcrY>
(Medtronic employees play a role in changing what it means to live with chronic disease)