

Project Title

Enhancing Worker's Safety & Efficiency through EMTRAC(Electric Motored Transformable Cart)

Project Lead and Members

- Paul Yong, Chief Financial Officer
- Terence Yeo, Assistant Director
- Eric Goh, Manager
- Steven Thai, Executive
- Bernard Lim, Store Assistant Manager
- Garry Tan, Store Assistant Manager
- Ong Boon Cheong, Store Supervisor
- Chan Chee Chioong, Senior Storekeeper

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: Nov 2013

Project Category

Technology, Safety

Keywords

Tan Tock Seng Hospital, Operation, Product Development, New Equipment, Electric Motored Transformable Cart, Highly Maneuverable Cart, Sound Proof Cart, Trolley Improvement, Supplies Transportation, Supplies Delivery Time Saving, Energy Saving, Cost Saving, Cost Effectiveness, Safety, Productivity, Warehousing, Goods Handling, Efficiency, Flexibility in Cart Transformation, Reduce Waste, Materials Management, F&B, Linen, Housekeeping, Medical/Surgical Equipment Sterilising, Patient Medical Records

Name and Email of Project Contact Person(s)

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ENTRY FORM FOR SERVICE IMPROVEMENT FOR INTERNAL CUSTOMERS CATEGORY

These are awards for any hospital department or unit that implemented any outstanding projects on how better to serve their co-departments or employees better. How well did the project look upon the other department(s) as a "customer"? Special weight is given to how innovative the project is, how well it reinforces the concept of "internal customer", at no additional expense and how it improves service to its clientele.

INSTRUCTIONS

- a. Please fill out all the sections below and abide strictly by the word count. Words exceeding the maximum word count will be cut off automatically/truncated.
- b. IMPORTANT: It is necessary that the CEO certifies that all information you provide is true and correct by signing the form indicated in the last page.
- c. By submitting an entry, you agree that HMA will share relevant aspects of the Entry submitted on the HMA or related Resource Center website.

Background Information

Project Title Enhancing Worker's Safety & Efficiency through EMTRAC
(Electric Motored Transformable Cart)

Date Project Started Nov 2013

Enhancements made (for projects that did not start operations between Jan 2013 to May 2014)

Key staff involved in the project

- | | |
|---------------------|-------------------------|
| 1. Name | Paul Yong |
| Department/Function | Chief Financial Officer |
| 2. Name | Terence Yeo |
| Department/Function | Assistant Director |
| 3. Name | Eric Goh |
| Department/Function | Manager |
| 4. Name | Steven Thai |
| Department/Function | Executive |
| 5. Name | Bernard Lim |
| Department/Function | Store Assistant Manager |

Name	Garry Tan
Department/Function	Store Assistant Manager
Name	Ong Boon Cheong
Department/Function	Store Supervisor
Name	Chan Chee Chioong
Department/Function	Senior Storekeeper

PLEASE ANSWER THE FOLLOWING QUESTIONS USING THE MAXIMUM WORD ALLOCATIONS INDICATED

1. Please give some background to the project or program including how it originated. Give details of the extent to which the project improves the efficiency or effectiveness of co- departments or employees who are "internal customers". Outline any specific goals or targets you had in mind prior to the project being put together. **MAX 350 WORDS.**

In a busy hospital, the conveying of supplies in a timely manner is critical. The simple trolley is our main equipment for conveying supplies within the hospital. In 2012, we successfully modified the simple trolley to Tri-Cart - a lighter, user-friendly, more flexible and configurable structure that could reduce the time and effort needed to transport supplies between trolleys of different sizes. Our Tri-Cart was recognised for its innovation and effectiveness to staff and was conferred the AHMA Excellence award in this category.

Our Hospital has been expanding, opening more clinics and wards. Our patient volumes are also increasing. Though the Tri-Cart has been instrumental in meeting the huge demand for supplies, the need to transport more and on an increased frequency is taking its toll on our storekeepers, many of whom are older workers. Based on staff's feedback, we embarked on a second trolley improvement project to make it easier for our storekeepers to manage their workload.

Introducing **EMTRAC** - the **Electric Motored Transformable Cart**. Weighing only 100kg, this improved vehicle allows storekeepers to better maneuver it without overexerting themselves when delivering heavy items. With Emtrac, the storekeeper only needs to stand on the loaded Emtrac, start the motor, and off he goes. The improved system gives them better control and saves them much time and energy. It is also safer as he is able to get a good 360 degree view his surroundings.

The timeliness of EMTRAC has empowered our storekeepers to fulfill their main duties at a faster speed and with greater efficiency without compromising on their health or limit their capacity. It also caters to other groups of staff conveying records, linen, surgical/ medical equipment and even wheelchairs around the hospital.

EMTRAC started because of our commitment to build a great place for staff to work in. It has reduced delivery time by 10 mins per trip, bringing it to 80mins per trip. It saves the hospital 1040 man hours over 4 daily deliveries on 6 vehicles. Hence, it has improved staff work efficiency, in particular, lightening the workload of older staff while encouraging productivity.

Word count: 349 / 350

2. Please explain how the project benefitted a large number of internal customer staff or a select group? Or what other benefits were derived. **MAX 200 WORDS.**

Besides being user-friendly and catering to warehousing and goods handling needs, this innovation also serves the other staff of the hospital. EMTRAC has brought relief to at least 200 staff from the materials management, F&B, linen, housekeeping, medical/surgical equipment sterilising, patient medical records and reports departments.

TTSH spans a wide area of 3 million square feet. The EMTRAC has helped to shorten delivery time across the hospital, be it from the Central Store to the Wards, the Kitchen or Linen Store to the Endoscopy Centre or from the Medical Record Office to the Specialists Outpatient Clinics. What started out as an innovation for storekeepers is making a marked difference to the lives of many other staff

Compliments internal stakeholders

"...It is ideal for our F&B-Kitchen to use for delivering tea breaks snacks to the patients...as no extra manpower effort is required to do manually..."

Ambulatory & Emergency Department (A&E): *"...so now you are able to supply and deliver my medical items quicker because you reached us by means of this EMTRAC...so nice...thanks a lot..."*

- *"...there must have some ways of helping our housekeepers to move things easier and faster if we are going use this trolley motored mobile..."*
- *"...certain foods and drinks transporting should be able to reach end-points faster if this trolley motored mobile is serviceable for our Kitchen to use..."*

(206 words)

3. Please describe IF and how the project of internal customer service was also beneficial from the patient's perspective and experience, and how it improved patient care, patient safety or service. Preferably please present quantifiable information such as "before and after" measurements if any. **MAX 200 WORDS.**

The EMTRAC has reduced service defects and wastes, improved communications and reduced transportation times to meet internal customers' requests. It has reduced the time for a typical delivery from the central store to the ward by 10mins, bringing it down to 80mins per trip. Below is a scenario:

- For the storekeeper who makes at least 4 delivery trips to transport the supplies daily, it has saved him at least 10 mins per trip or 40mins for the 4 trips.
- Given 260 working days a year, the total time saved for 6 EMTRACs would be 1040 man hours saved annually. (4 trips X 10 minutes X 260 working days X 6 EMTRAC / 60)
- Indirect users from wheelchair, F&B, linen, housekeeping departments have benefited from less wastage by tapping on EMTRAC's capabilities. Patients also benefited from better care as a result of the efficiency it is able to deliver.
- Compliment from outpatient: *"...thank you very much...so fast one wheelchair is here for my mother to sit,...I see that you all could provide her a wheelchair by using this kind of mobile bay to bring in faster...I appreciate you all..."*
(193 words)

4. Please explain how the project is innovative and what the reaction of the internal customers that benefited was. **MAX 150 WORDS.**

The mix and match flexibility in transforming with various types and sizes of carts to transport various types of supplies and equipment makes it appealing. In addition, it is safe to use, cost effective to produce, and highly maneuverable in a tight space environment. This highly efficient and environmental friendly vehicle is sound proof and operates on cleaned energy i.e. rechargeable batteries.

- This electric mobile cart is multi-functional, detachable and usable for other trolleys from departments like F&B, Patients' Medical Records, Pharmacy, and Housekeeping.
- Safety is enhanced as it is now powered with motorised capabilities and connected to the carts. When it comes to a halt, the risk and impact of knocking things in front is much lower and lesser than the former manually operated carts.
- *"...housekeepers and cleaners can use this EMTRAC to clear rubbish, cartons and disposed items faster and safer..." - **Balakrishnan, Housekeeping Department & Cleaner***

(167 words)

5. Please give some background to the project team that originated, studied and developed the project or program. **MAX 200 WORDS.**

The EMTRAC team was formed in November 2013. It aims to study ways to enhance the manually operated TRI-Cart System that is still operated manually. It also aims to empower internal stakeholders to do their job more efficiently in transporting medical supplies. Hence, the team members decided to come together to explore the potential and possibilities. The team comprises the following staff from the Finance Division, under Materials Management Department.

During the study process, our various internal stakeholders, managers and administrators from the F&B, catering, linen, housekeeping, gardening, patient medical records, and a few other departments have expressed their interests and enquire about their potential in of EMTRAC benefiting their department's operational needs. This goes to show that there's a need to be filled in making our operations more efficient.

(130 words)

6. Please give any other information, including third party testimonial regarding your project which you think would help convince the judges that this project (or program) should win this category. **MAX 200 WORDS.**

Internal customers such as nursing managers, clinicians, clinic operation managers are motivated by this latest innovation that could be maximised to for the benefits of facilitate patient care and rising healthcare expectation.

The challenging instance of transporting wheelchairs can be exhausting if it is executed manually by porters. With EMTRAC, its capabilities has made transporting wheelchairs more efficient, reduced the likelihood of insufficient wheel chair supply in times of patent needs and shortened waiting time. Our patients and their family members were pleased to see that wheelchairs are available for use whenever they need them.

Apart from internal stakeholders, other local healthcare providers from Institute of Mental Hospital, National University Hospital, Khoo Teck Puat Hospital have visited us to learn about this highly mobilised invention in the hope to meet their patient needs.

Compliments by local and international visitors

- *"...this trolley motored mobile is very good enough for our IMH to use for transporting things from one end to another faster and saver. A few of our departments will find it productive and necessary to use..." - **IMH's Operation Assistant Director, June Lim***
- *"...your hospital is better than us...you all are already using this motorised trolley to transfer things more quickly than us in Thailand...very advance, better than us...we are still using manual trolley...we hope to emulate this concept for our hospital operational use" - **Thailand's Rajavithi Hospital's Deputy Director, Dr. Manus Pothaporn***

(234 words)