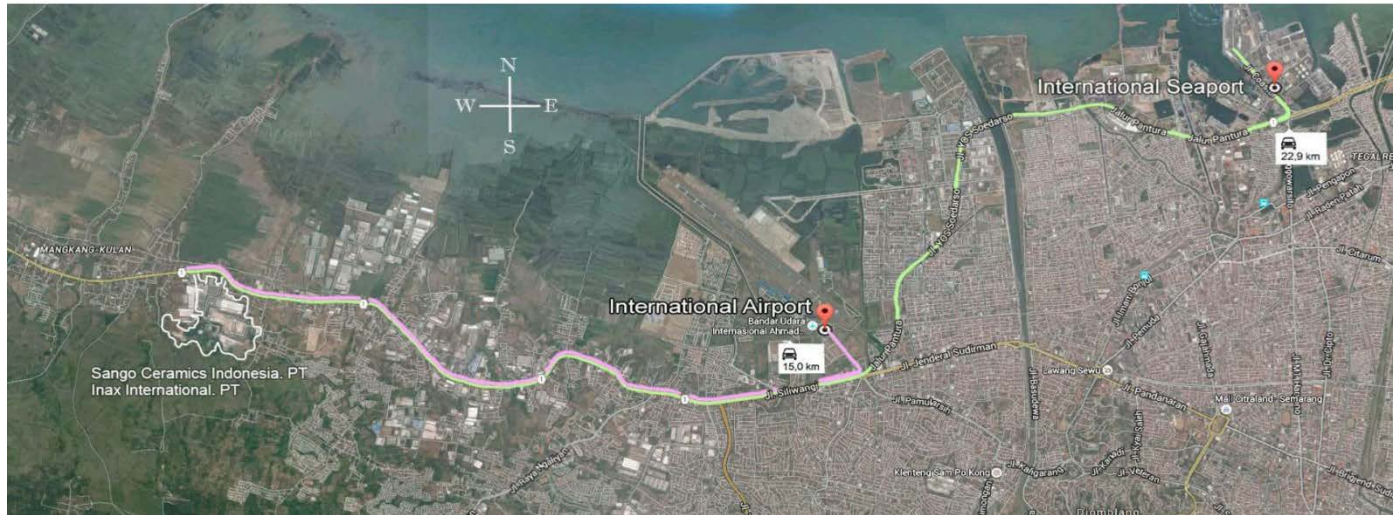




PT SANGO CERAMICS INDONESIA

AROUND 15 KM
FROM INTERNATIONAL AIRPORT

FROM INTERNATIONAL SEAPORT





INTRODUCTION

Founded in 1977



Location

Semarang, Central Java, Indonesia



Production Area

200.000 sqm (Scalable)



Warehouse Area

100.000 sqm (Scalable)



Workers

Over 1000 Employees



Production Capacity

> 20 Mio. Pcs per annum

Our main products

tableware for Retail, Hotel , Restaurant and Airlines

Our main markets :

- USA 70%
- Europe 15%
- Indonesia 10%
- Other 5%



BODY TYPES

PT Sango is producing a range of different Ceramic tableware products to suit the various customer demands.

The body types include Stoneware, Fine China, Durable Fine China, and Bone China.

DIFFERENT BODY TYPES

	STONEWARE	FINE CHINA	DURABLE FINE CHINA	BONE CHINA
Glow %	83 Cream	87 White Cream	89 White Cream	92 White
Microwave	V	V	V	V
Oven	V	V	V	V
Dishwasher	V	V	V	V
Water Absorption	< 1.0	< 0.5	< 0.5	0
Strength	O	+	+++	+++
Temp Shock	O	+	++	- O
Translucency	-	+	-	+
Knife Marking	No With transparant glaze	No	No	No



GLAZES

PT Sango also provides a range of different glazes and glaze effects. All this glazes are specifically developed for each body type and suits the highest standards.

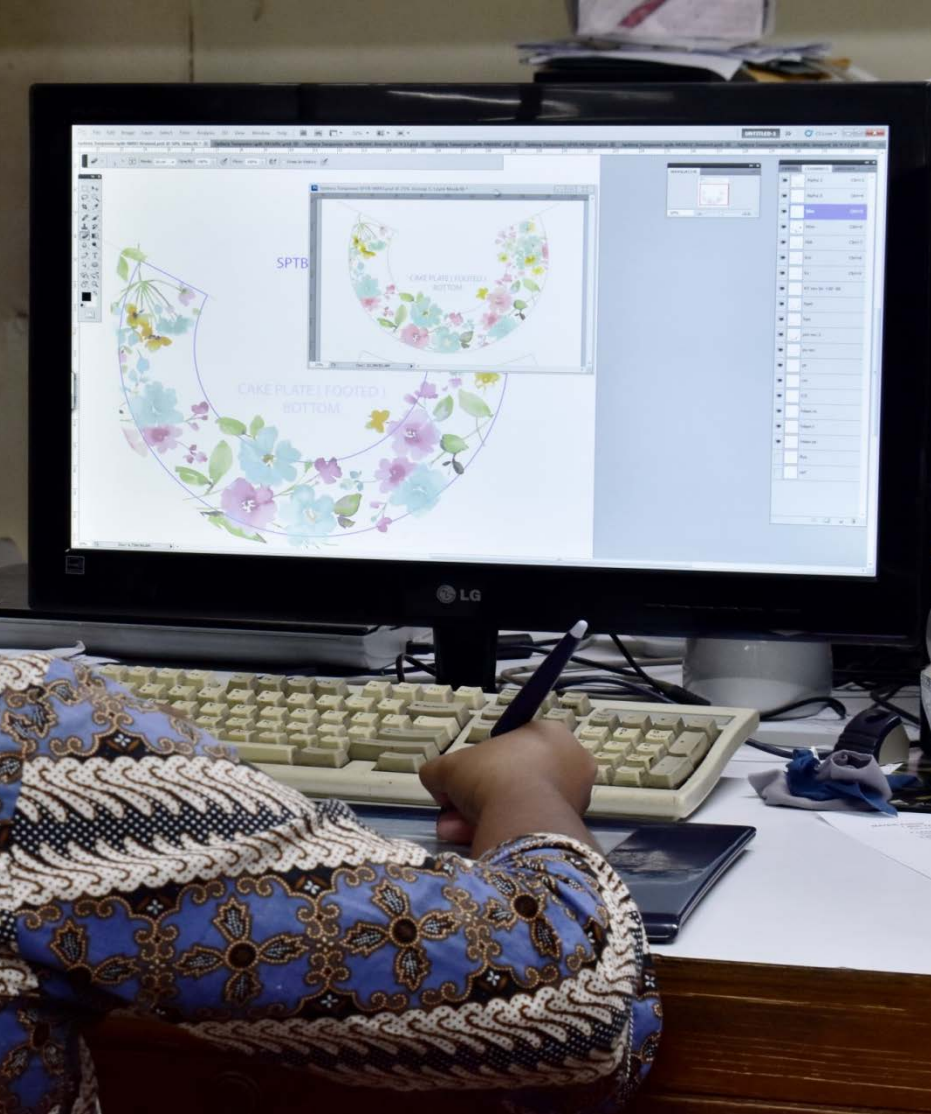
The glazes are: Transparent glazes, colored glazes, Reactive glazes and glazes with Antibacterial properties.

STANDARDS

All products are manufactured to pass the various global standards for products with food contact including FDA, Prop 65, the new Norwegian and European Standards.

High durability and longevity as well high functionality and good design are key features.





DESIGN

PT Sango operates own design studios in New York and Semarang. In addition, we also have established networks of international designers to offer products that fulfill customers' demands.

The were equipped production facility enables PT Sango to produce not only round shapes but also all kinds of irregular shapes for flat, hollowware items and cups.



CLAY MAKING

/ POTTING MACHINES

CLAY MAKING / POTTING MACHINES

Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



10 Dust Press Machines
from leading German
Machine suppliers



Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



4 Plate roller
machines lines

CLAY MAKING / POTTING MACHINES

Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



8 Cup Jollying Lines



Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



8 High Pressure
Casting Heads

CLAY MAKING / POTTING MACHINES

Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



2 Semi Automatic Casting Plants



Dust Press Machine

Plate Roller Machine

Cup Jellying

High Pressure Casting
Head

Semi Automatic Casting
Plants

Manual Bench Casting
Unit



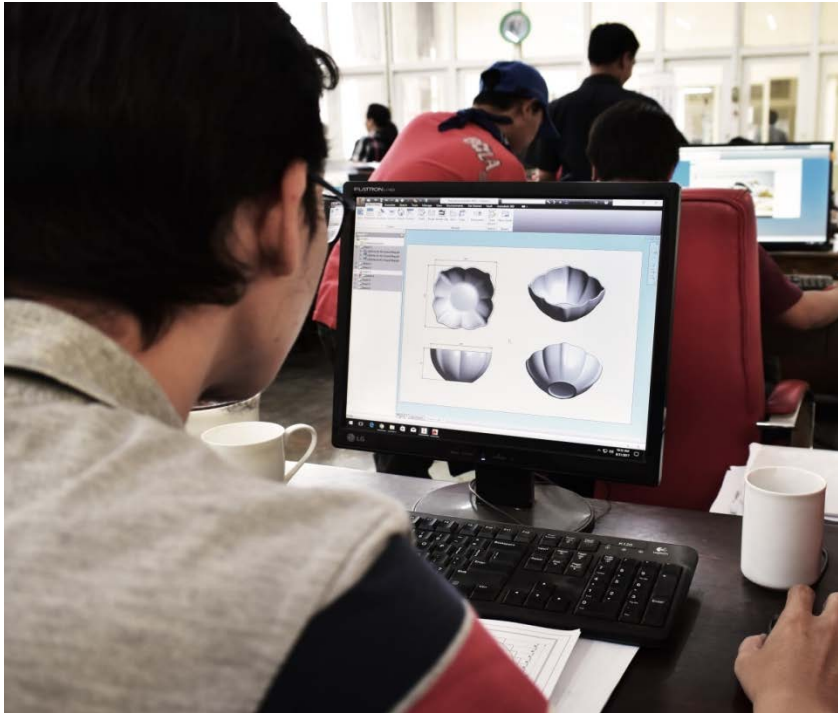
4 Manual Bench
Casting Units



THE POTTING DEPARTMENT

is supported by :

- An own body preparation facility including 2 spray dryers
- A fully equipped mechanical workshop



THE POTTING DEPARTMENT

is supported by :

- A tool shop to produce dust pressed tools and HPC tools
- A modelling and mould making with CAD / CAM technology

Firing Technology in the Clay to Glost Department

Modern Biscuit tunnel kiln
with a capacity of 75.000 pieces per
day (commissioned 2017)



Modern Glost tunnel kiln
with a capacity of 70.000 pieces per
day (commissioned 2017)



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day (commissioned 2017)



Flexible fast firing roller kiln for Special glazes and re-firing with a capacity of > 20.000 pieces per day



Various intermittent shuttle kilns

The kilns are designed to maximise the flexibility for various loading pattern. These guarantees an always optimised production lead time regardless the daily changes for demand variation in size, item type, body or glaze combinations

Glazing Facilities

The glazing department is set up for high flexibility in order to achieve a wide range of different glaze finishes, including:

- Various hand glazing stations for transparent and colour/effect glazes
- Several cup and plate dipping machines for all glaze types
- Hand spray booths
- Automatic spray line

All glazes are manufactured and prepared on site, with technical support from the Laboratory





FOOT POLISHING

100% of the production undergoes a
foot polishing process before
proceed to final selection process

Internal factory logistic

/transportation

- The various production processes are all linked with a modern overhead conveyor.
- Together with the flexible machine, kiln set up, and a multiple shift working pattern, this guarantees a minimum on WIP and a optimised lead time through the factory of only 2-3 working days from start of clay production into the Glost stock.





Decoration

The factory has a wide range of different decoration methods and is using onglaze and inglaze firing. The application performed by an experienced and highly skilled workforce.

- Decal hand application
- Hand banding
- Electro plating
- Precious metals application



The decoration firing takes place in dedicated tunnel kilns suitable for the product.

After final inspection of the ware the product is packed according to customer specification and shipped from the company warehouse.





Quality Control

- Quality is a very important aspect of our products. Nearly every 11th person in PTS works in Quality control.
- Every process step from receiving raw materials to shipping is checked and need approval from the QC person.
- This ensures that the final product conforms to all legal, technical requirements, and all other agreed quality criteria



Decal manufacturing plant

PT Sango operates one of the largest decal printing facilities in Asia.
There are 18 automated printing and several hand operated machines.

Only the best pigments and precious metals are used in ensure that all legal requirements in terms of heavy metal releases are fulfilled.

A computerised state of the art development Center ensures that product development happens quick. Both sampling process and mass production have short lead times.



WORLD CLASS Laboratory

The Lab in PT Sango is well equipped with modern testing facilities but also with facilities to produce and fire small scale body and glaze formulations. This is the base for a extensive R&R in order to permanently improve our products



WORLD CLASS

Laboratory

To ensure that the finished product meets all necessary criteria we constantly check

- Lead and Cadmium release
- Microwave and dishwasher safety
- Chipping test
- Thermal expansion
- Water absorption
- Particle size distribution
- X-ray Fluorescence etc.



PACKAGING

Department



WAREHOUSE

Our dispatch warehouse has the capacity to carry large stocks and can turn around up to 10 x 40Ft containers per day if required

CURRENT AUDIT CERTIFICATIONS

PT Sango work with several well know global companies as a supply partner. Factory audits are happening on a regular base. We currently hold the following certificates:

- **BCSI**
- **Sedex**
- **SNI**
- **ISO 9001-2009**
- **HIGGS**
- **Ct pat security**
- **Social Compliance for Target, BBB, Kohl's, H&M and Burlington Coates**
- **Proper (Energy conservation/Sustainability)**

PACKAGING FACTORY

Own packaging facility including laminating machines and offset printing machines. Packaging can be done to all customer specifications.



SUSTAINABILITY

We always prided itself on practicing sustainability and social compliance measures since the inception of the factory.

Being environmentally-friendly & caring for our workers are part of our everyday philosophy.

We continue to make changes to further improve our sustainability & responsible sourcing practices and to enhance our employee welfare, health and safety.

SUSTAINABILITY

Waste Recycling

Clay Recycling & Re-purpose
of Finished Goods

Chemical Management



- Ceramics manufacturing generates material waste and has a high consumption of water. A modernized effluent plant has enabled us to separate water and waste; the resulting water is now clean enough for the government to issue a permit to discharge it into the river
- The factory also uses 15% less water as the recycled water can be used in our manufacturing processes.

SUSTAINABILITY

Waste Recycling

Clay Recycling & Re-purpose
of Finished Goods

Chemical Management



- Following our first firing, reject biscuit product can be crushed, then recycled into the body composition.
- 7% of our sanitary body composition is made up of recycled porcelain.
- We also produce paving stones. The concrete mixture consists of 10% crushed porcelain waste.

SUSTAINABILITY

Waste Recycling

Clay Recycling & Re-purpose
of Finished Goods

Chemical Management



The use of certain chemicals is unavoidable in ceramic manufacturing. However we do ensure only products that are safe, certified and have complete MSDS data are used.

All chemicals are housed in our secure new chemicals warehouse. The facility is open for 3rd party inspection.

Next Steps

in PT SANGO

- Extending the business in all categories
(Tableware, Sanitary Ware, and Furniture)
- Improving Customer Service and
Competitiveness
- Preparing the company for Future Challenges

Initiatives to achieve the Objectives

1. Implement a lean and modern Management Structure.
2. Implement a BI (Business Improvement) philosophy.
3. Stepwise modernisation of Manufacturing Facilities.
4. Create 3 Center of Excellence (NPD, Laboratory, QC)
5. Improve Product Quality at competitive prices.
6. Strengthen the Customer Service Department.
7. Improved TPM.
8. Improved H&S.
9. Implementation of 5S.



What have we done so far

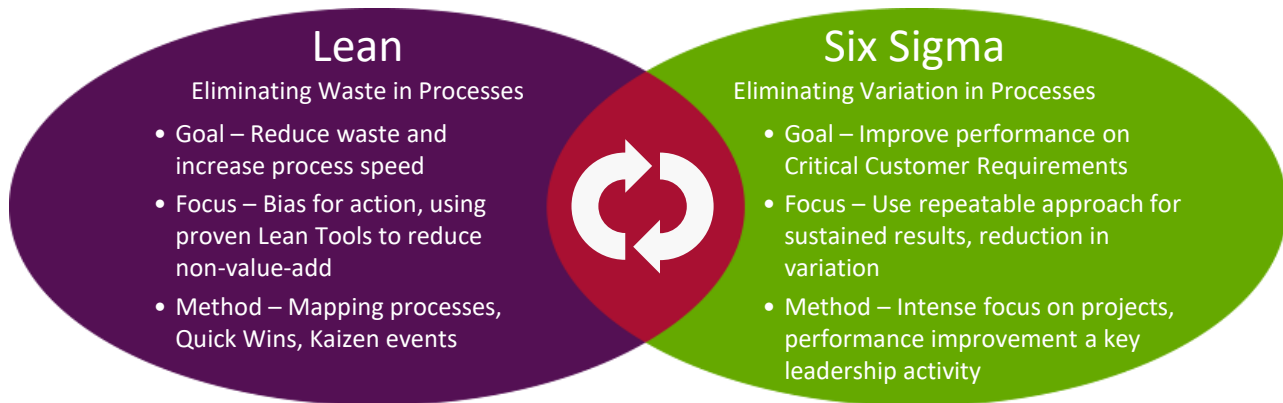
1. We hired two BI Experts (MBB and BB) in October.
2. We have a new Management structure in Place in the tableware factory.
3. We have established a Designer network.
4. We have invested in two modern tunnel kilns including infrastructure (2017).
5. We have developed new white bodies with much improved durability properties.
6. We have started the 5S program in a pilot area (lab).



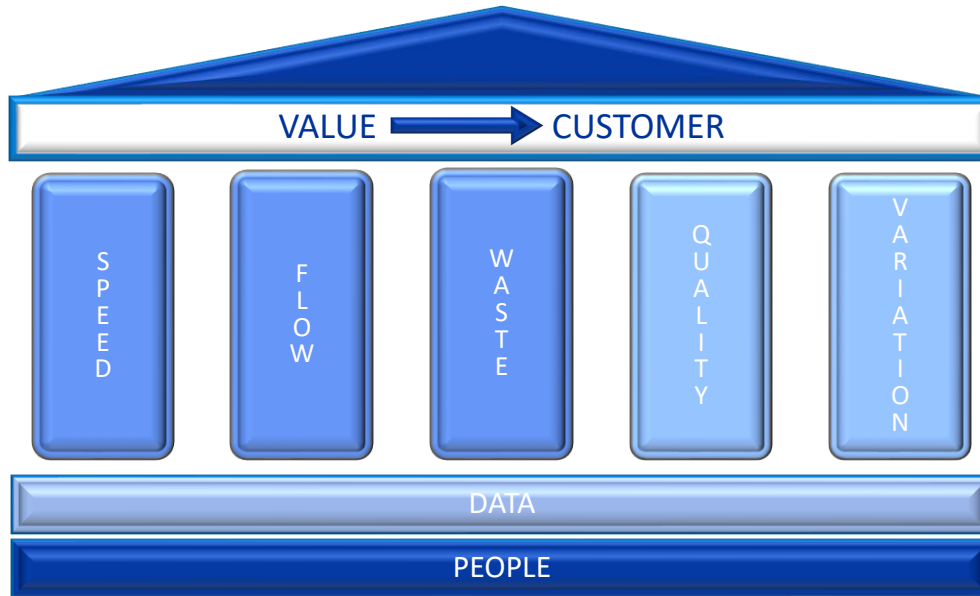
SANGO BUSINESS CONTINUOUS IMPROVEMENT PROGRAM

LEAN AND SIX SIGMA COMPLEMENT EACH OTHER

Lean Six Sigma is a management approach to drive continuous improvement, and encompasses well-proven tools and methodologies



THIS COMBINES TO DELIVER VALUE FOR THE CUSTOMER?



DEFINING CUSTOMER REQUIREMENTS

The challenge is to understand how our customers, stakeholders and process owner define and prioritise the various needs and expectations they have of your products and services or constraints they may place on the process.

Quality

→ Product or service features, attributes, dimensions, and characteristics relating to the function of the product or service. For example, reliability, availability, taste, effectiveness. Derived primarily from the customer.

Cost

→ For example, budgets, prices to consumer, repair costs, purchase price, financing terms, depreciation, residual value. Derived primarily from the business.

Speed

→ For example, lead times, delivery times, turnaround times, setup times, delays. Derived equally from the customer and the business.

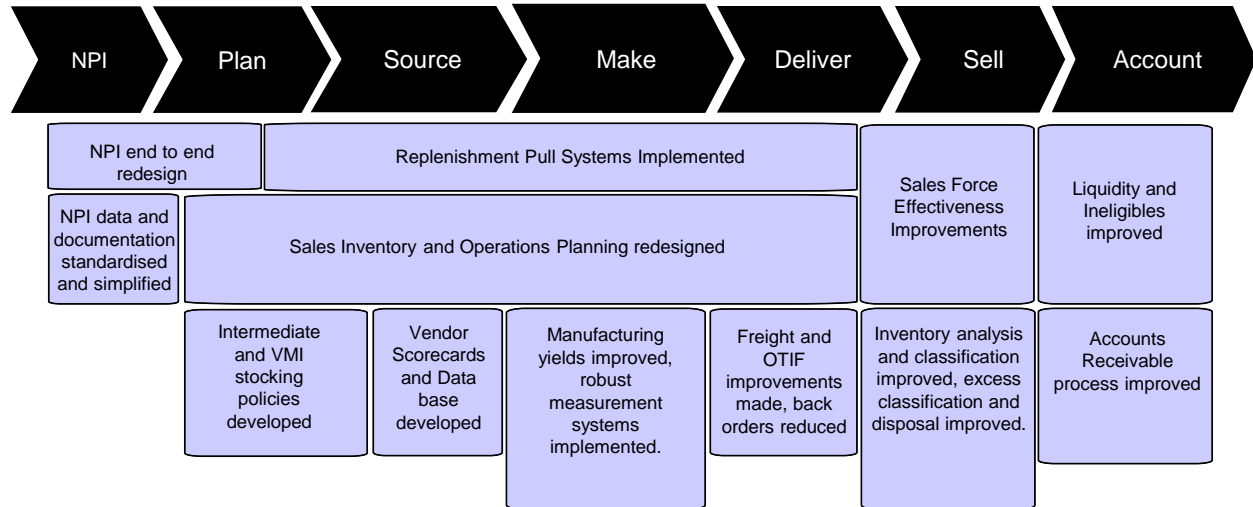
Service and Safety

→ For example service requirements, compliance to safety standards, maintainability, customer-required maintenance, product liability, product/service safety. Derived primarily from business and regulatory agencies.

Corporate Responsibility

→ For example, environmental impact, ethical business conduct, business risk management, regulatory and legal compliance. Derived primarily from customer, business and regulatory agencies.

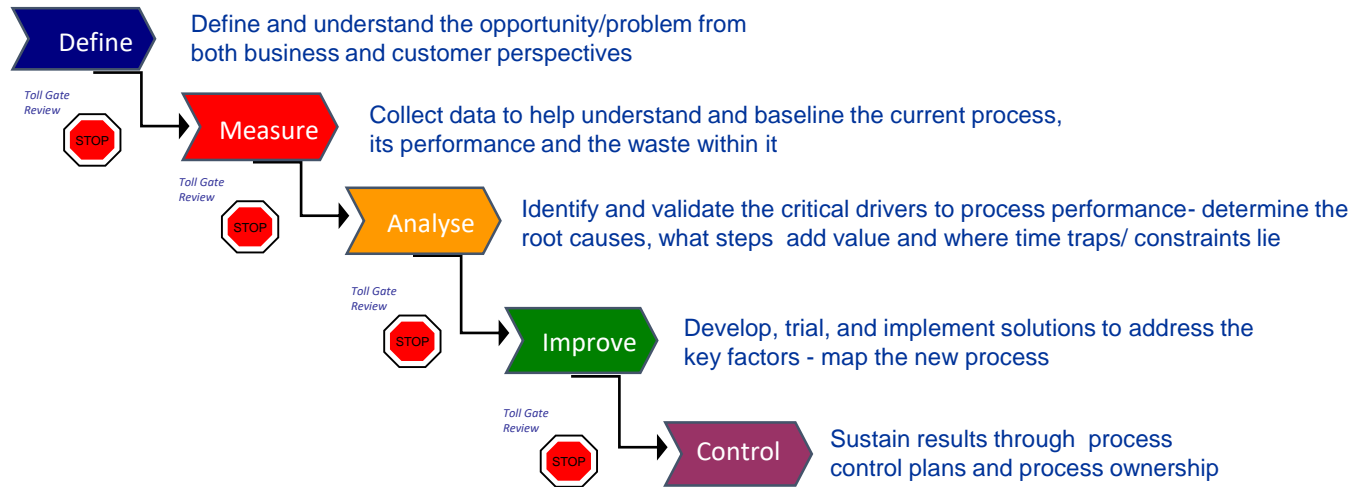
BUSINESS IMPROVEMENT ACROSS THE VALUE CHAIN



SUPPORTING CAPABILITIES

<i>Health & Safety</i>	Health and Safety improvements made across Manufacturing and Non
<i>Energy & Environmental</i>	Energy and Environmental impact / reduction changes made in UK and Indonesia
<i>Human Resources</i>	Human Resources: PDP and Objective setting process designed and initiated

DEFINE, MEASURE, ANALYSE, IMPROVE, AND CONTROL ROADMAP



The Define, Measure, Analyse, Improve, and Control approach is designed to get better results faster

PROJECT CHARTER DEVELOPMENT IS AN ITERATIVE PROCESS

– CHANGES IN ONE SECTION WILL AFFECT ANOTHER SECTION

