

# PROCESS TOOL OVERVIEW

## Six Sigma SIPOC Framework

# OUTLINE

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*Adaptable businesses modify and develop their processes to the situation. One school of thought on modifying and developing processes is Six Sigma. Among the most fundamental Six Sigma tools is the SIPOC process framework.*

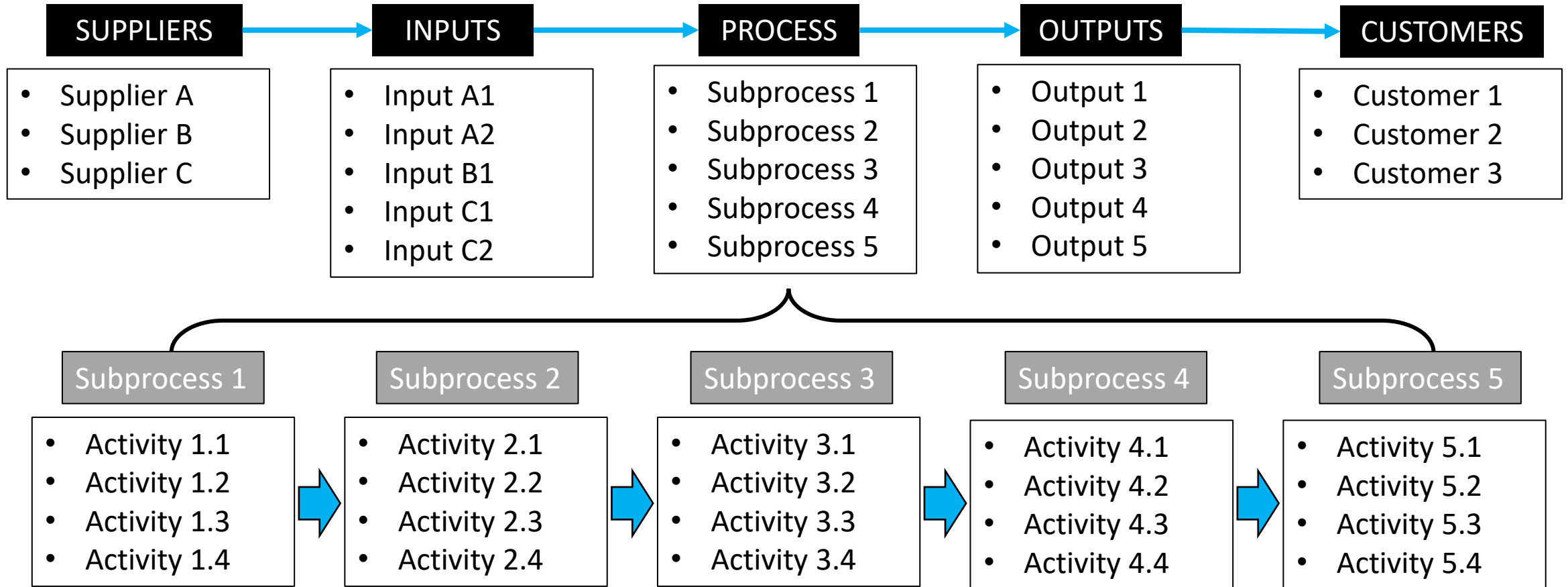
*“SIPOC” stands for Supplier – Input – Process – Output – Customer. Using some version of a SIPOC is essential for methodical process definition, measurement, analysis, improvement, and control work.*

*The SIPOC process framework in this presentation was developed by TSM Worldwide LLC to illustrate application to a manufacturing (e.g. a machine shop) or mechanical contracting-related fabrication environment.*

*For more information or to submit inquiries, please see the capabilities statement at the end.*

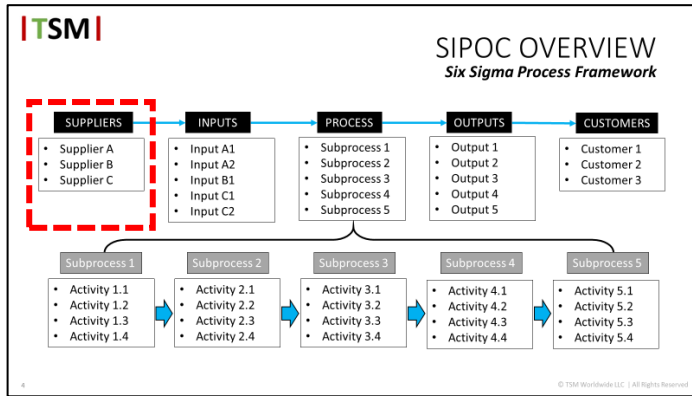
# SIPOC OVERVIEW

## *Six Sigma Process Framework*



# SIPOC DETAIL

*What is meant by “Supplier?”*



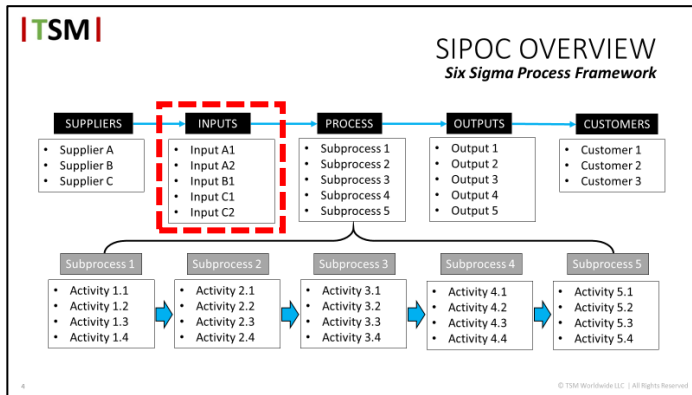
## SUPPLIER

- Supplier A
- Supplier B
- Supplier C

- Supplier is meant generically to mean the provider of a given input necessary to eventually complete a process.
- Suppliers can refer to actual people, companies, websites, industry groups, anyone or anything that releases or publishes or otherwise provides a relevant process input.
- If there is more than one supplier involved in a process, its useful to create a naming convention that associates a given supplier with an input.

# SIPOC DETAIL

## *What is meant by “Inputs?”*



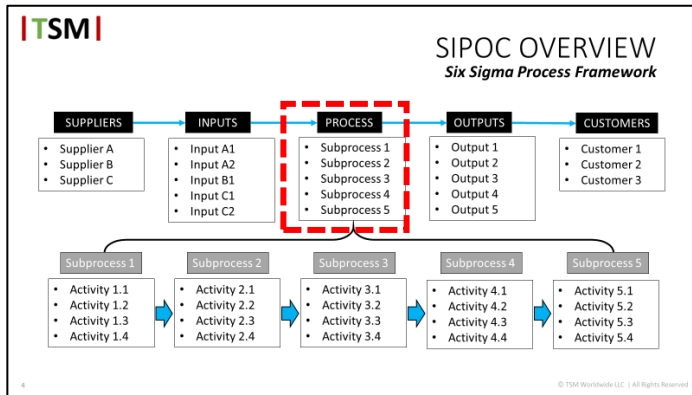
### INPUTS

- Input A1
- Input A2
- Input B1
- Input C1
- Input C2

- An input is generically to mean anything provided by a supplier that is necessary to eventually complete a process.
- Can be actual people, specific kinds of tools and materials, technical specs, relevant laws and building ordinances, business purchasing policy, customer specifications and expectations, contract details, project plan details, project manager guidance, foreman guidance...basically anything relevant to the process and delivering desired outputs for a defined customer.
- Should be named to clarify where they came from. For example, Inputs A1 and B1 would be the from Customer A and B respectively.

# SIPOC DETAIL

## What is meant by “Process?” (Part 1)



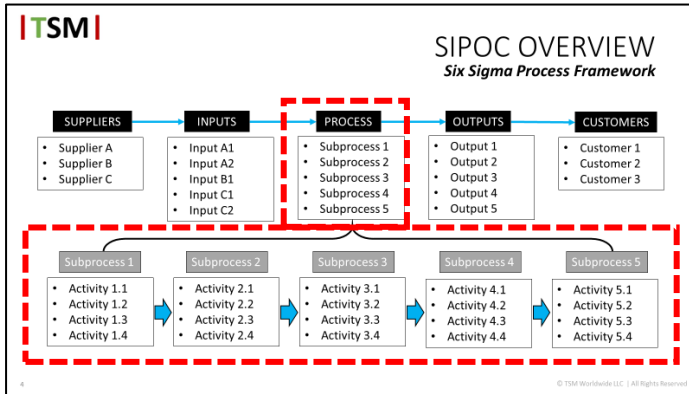
### PROCESS

- Subprocess 1
- Subprocess 2
- Subprocess 3
- Subprocess 4
- Subprocess 5

- A process is the series of activities or tasks performed to transform inputs into an output for a customer.
- A process can be simple and isolated with straight forward linear aspects. More often, processes need to be broken down into hierarchies of sub processes, each with their own activities. Processes can have linear, cyclical, and parallel aspects, and might even be nested within a larger process or have subordinate nested processes.
- Processes can have “always on” aspects or conditional characteristics (e.g. if x, the execute process X1, if x does not happen, do process X2.)

# SIPOC DETAIL

## What is meant by “Process?” (Part 2)

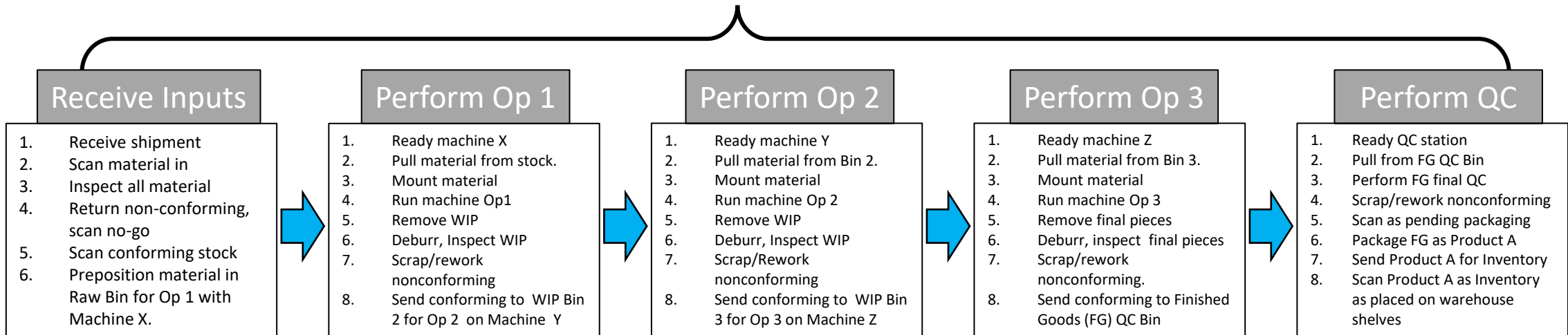


### Fab Product A

- Receive Inputs
- Perform Op 1
- Perform Op 2
- Perform Op 3
- Perform QC

### Sample process narrative:

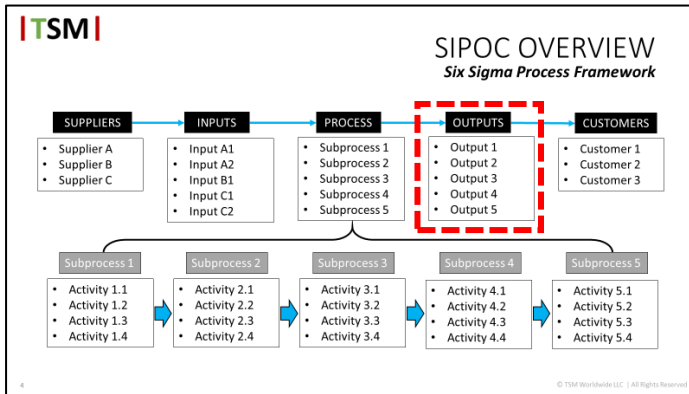
Fabricate Product A.... Raw material is received from a supplier, this material is then converted through 3 machining operations into finished goods, then packaged as final products, and finally placed into inventory.





# SIPOC DETAIL

## *What is meant by “Outputs?”*



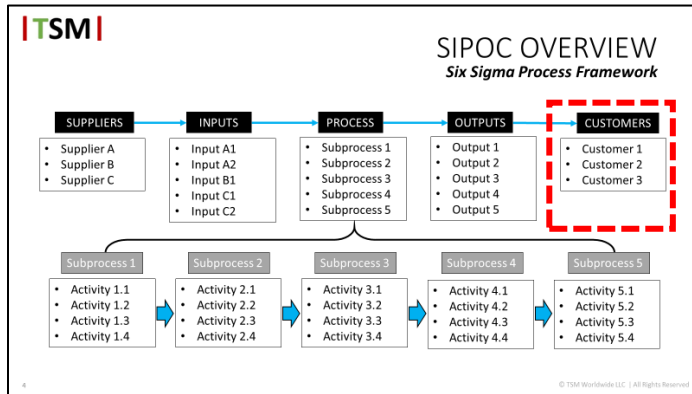
### OUTPUTS

- Output 1
- Output 2
- Output 3
- Output 4
- Output 5

- Output is generically to mean the deliverable or end-product of a given process, which can be anything from planning documents, to final fabricated components, products, to sheet metal or piping installed for a given floor plan, to a finished building depending on your level of concern / analysis.
- Outputs can be tangible or intangible. For example, a component widget with stamped serial number is an output. A team of installers all trained up on specific task or procedure can also be understood as an output from a project preparation process.
- Outputs can be final or inputs to other processes. For example, the component widget or the trained installer team above could be mapped as inputs to a downstream processes in making an assembled final product or completing building system installation for a given zone, floor, or building.

# SIPOC DETAIL

## *What is meant by “Customers?”*



### CUSTOMERS

- Customer 1
- Customer 2
- Customer 3

- Customers could be fellow employees, actual client customers, and teams or organizations of any sort.
- They can be “end customers” who make use of the output for their own purposes. Or they can be intermediate customers in that they pass along the output as if the output is actually an input into their own process in some way.
- A basic principle of Six Sigma process development and quality management generally is that is that all processes, all subprocesses, and all activities need to be conceptualized to ultimately meet the needs and expectations or requirements of all downstream process customers.



## CAPABILITIES STATEMENT



**Jeff Moran**  
Owner & Project Executive

### Biography

30+ years of diverse functional and international experience with TSM Worldwide LLC, Honeywell Aerospace, Ingersoll-Rand, and Deloitte including 14 years of distinguished Regular & Reserve Army service as an apprentice and commissioned Intelligence Officer.

### Selected Individual Certifications

MCAA-AIPM | DAU-DSAM | DoD-PPBES | DoD-RMBC  
SBA 7J (10+) | FMI - Construction Exec | Six Sigma Blackbelt  
MN State –Tech Diploma (Firearms Design, Fab, Tech Svc)

### Education

BSFS, Georgetown University (honors)  
MBA, Emory University  
LLM-MS, Université de Genève-IHEID

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The TSM Worldwide LLC (TSM) story began in 2006 after Jeff Moran returned from overseas military duty, experienced serious transitional setbacks, and completed a multi-year intensive rehabilitation and re-employment plan sponsored by the Veterans Benefits Administration.

Today, TSM conscientiously and creatively delivers a range of specialized strategy and operations management and decision analytics services for contract building construction (i.e. generals and mechanicals using BIM/VDC), precision manufacturing (i.e. with machine shops using CAD/CAM), and related maintenance services in the markets we serve.

### Functional Competencies

- Compliance program evaluation, development, management
- Continuous process improvement
- Financial analysis, management accounting, audit, controls
- Interim management & supervision
- Investigative research methods & practices
- Machine shop design and manufacturing service management
- Mechanical building systems installations, service management
- Program/project management (full life-cycle)
- Risk-management & advisory (full spectrum)
- Sales & marketing management
- Service & manufacturing operations management
- Strategic information systems planning, systems security
- Strategic ventures & contracts management
- Valuation, estimating, forecasting, and budgeting
- Vendor/contractor due diligence, negotiations & management

### Markets Served

- Aerospace, defense, intelligence products & services
- Commercial & government
- Medical devices, hospitals/academic medical centers
- Manufacturing & building construction services
- Management consulting client service
- Military installations, civilian public buildings
- Public safety, security products & services

### NAICS Codes

- Administrative management, related consulting services | 541611
- Commercial & institutional building construction | 236220
- Machine shops | 332710
- Marketing research | 541910
- Plumbing, heating, air-conditioning contractors | 238220
- Process, distribution, logistics consulting services | 541614

### Other Certifications / Security Clearance

- Federal Executive Board-certified (SADBOC) Contracting-Ready (2020)
- SDVOSB, HUBZone: Formal VA and SBA certification process underway with VA, SBA, PTAC advisors and verifiers
- Top Secret + clearance expired, reinvestigation process pending

**CAGE Code** 8FQV5 (2019)

**DUNS #** 012488963 (2010)

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