

Process Improvement Flowchart

# As-Is Process Flow Chart Evaluation

**Select** a process from an organization you work for or are familiar with. You will use this process in your Week 2 & Week 4 Signature Assignments as well.

**Create** a flowchart of the as-is process using Microsoft Word, PowerPoint, Vizio, or Excel.

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# Process Improvement Flow Chart

**Determine** how the process can be improvedbased on the results of your evaluation.

**Define** metrics and measure the current process.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| VARIABLES OBTAINED | |  |  |  |  |  |  |
| Target | 480 |  | Cp = | 1.968 |  |  |  |
| USL | 620 |  | K = | -0.402 |  |  |  |
| LSL | 395 |  | Cpk = | 2.278 |  |  |  |
|  |  |  | or Cpk = | 1.657 |  |  |  |
| Data | 529 |  |  |  |  |  |  |
|  | 552 |  | Cp = (USL\_LSL)/6 sigma | | |  |  |
|  | 541 |  | K = (target - mean)/(USL-LSL)/2 | | |  |  |
|  | 512 |  | Cpk = smallest of :{(mean - LSL)/3sigma or | | | |  |
|  | 518 |  | (USL - mean)/3sigma} | | | |  |
|  | 515 |  | mean | 525.27 |  |  |  |
|  | 506 |  | sigma | 19.06 |  |  |  |
|  | 529 |  | s=USL-LSL/12 | 18.75 | Cp=2.0 |  |  |
|  | 535 |  |  |  |  |  |  |
|  | 553 |  |  |  |  |  |  |
|  | 490 | Value | Actual | Ideal |  | Target | 480 |
|  | 520 | 367.5 | 1.281E-15 | 1.515E-08 |  | USL | 620 |
|  | 555 | 386.25 | 2.726E-12 | 3.713E-06 |  | LSL | 395 |
|  | 509 | 405 | 2.202E-09 | 0.0003347 |  |  |  |
|  | 515 | 423.75 | 6.757E-07 | 0.0110939 |  |  |  |
|  |  | 442.5 | 7.874E-05 | 0.1352535 |  |  |  |
|  |  | 461.25 | 0.0034841 | 0.6064391 | 0.0213163 |  |  |
| |  | | --- | |  | |  | 480 | 0.0585466 | 1 |  |  |  |
|  |  | 498.75 | 0.3736135 | 0.6064391 |  |  |  |
|  |  | 517.5 | 0.9054165 | 0.1352535 |  |  |  |
|  |  | 536.25 | 0.8332576 | 0.0110939 |  |  |  |
|  |  | 555 | 0.291216 | 0.0003347 |  |  |  |
|  |  | 573.75 | 0.0386506 | 3.713E-06 |  |  |  |
|  |  | 592.5 | 0.0019481 | 1.515E-08 |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Use** process improvement techniques to improve the process. Create a flow chart of the improved process usingMicrosoft Word, PowerPoint, Vizio, or Excel. Use your professional judgment to ascertain how the future process will perform according to your metrics.

<insert new flow chart here>

# Summary

**Write** a 525-word executive summary that includes the following:

* A brief description of the process based on the flowchart of processes current state
* The results of your process evaluation and how the weak points can be strengthened. Include a description of the process improvement technique(s) used.
* A brief description of process improvements based on the process of the future state
* How you anticipate the future process will perform based on metrics used to evaluate process current state
* A description of your process improvement project to achieve the process future state

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| **Process Improvement Evaluation**  A control chart is a statistical method that aids in regulating errors in the business process. It mainly helps solve Type 1 error that affects the efficacy of the business process (Qiu, 2019). The error is also known as alpha risk, and it occurs when there is a deviation of the process from the normality. However, to successfully evaluate the process using control charts, it is relevant to establish whether the error is within control limits; otherwise, it is a type II error. On the other hand, control charts are only possible when the data is on a standard distribution pattern. In this case, the information is within reality and can facilitate creating a control chart to regulate the error. The formula for evaluating the rate of capability is shown below;  https://www.isixsigma.com/wp-content/uploads/images/stories/migrated/graphics/1105c.gif  The standard deviation is attained through computation: https://www.isixsigma.com/wp-content/uploads/images/stories/migrated/graphics/1105d.gif  **Benefits of the Six Stigma tools**  The six-stigma tools effectively reduce time wastage and mistakes in the process. These mistakes arise during the under and over-installment of various practices within the process. The employee can easily collect the errors using the six-stigma model. In this case, it can facilitate a more manageable flow of the activities. It implies more efficiency in the process and minimal error occurrence. It is crucial since quality is a critical factor in the health care setting, and mistakes can increase patient risk. Thus, an efficient process will improve patient satisfaction as it meets the needs and wants of everyone.  There is easier time management as the organization reduces patient waiting time during visits. They deliver timely care and facilitate quick response to patient ailments which is a factor for quick recovery. In this case, using the six-stigma tools can improve employee motivation and morale as they take less time to deal with the patient. Further, the organization can effectively make strategic plans since they have a dependable process that brings positive outcomes. The management can channel more resources to other projects to ensure better functioning and quality service delivery.  **Executive summary**  The Six-sigma model was the most effective in conducting process evaluation for the specific process. It provides the necessary set of techniques to ensure the development and control of errors within the process. in this case, and it eliminates all the defects to facilitate good care to patients. The existence of mistakes in the process under study can result in inadequate medical ca, increasing patient risk (Jin, Fan, and Chow, 2018). Hence, it is necessary to ensure that the model aligns with the desired outcomes and implements all relevant aspects. Further, the model effectively enhanced employee morale, an avital factor in delivering quality care. A good process ensures that the organization makes adequate profits and improves customer satisfaction. The metrics for computations had no restrictions in terms of process capability.  The extent to which the process capability affects the business process was quantifiable through the use of the following formula.    USL = Upper Specification Limit, LSL = Lower Specification Limit.  USL=620  LSL=395  Std. Dev=19.06  Mean=525.27  Determination of time is imperative in the six-sigma model to establish the time the patient spends in the hospital. Hence, the process is only effective when all the activities align with each patient's particular time. Over-escalation of time on one patient can result in errors and misuse of resources which delays productivity. Further, the model can effectively determine and factor out the idle time during the visit to the hospital.  Evaluation of costs for running the process is also a valuable metric since it leads to practical implementation. Using six-sigma, the organization can determine errors and areas which are cost thrifts (Lim, Priyono, and Mohamad, 2019). In this case, they can take the right actions to minimize the costs and ensure efficiency. Quality is also a good measure of successfully implementing the process and the six-sigma model in control.  Computation of Process Capability Index was necessary to establish the process's ability to provide positive outcomes. Successful completion of the process specifications entails eliminating errors and properly integrating the process to the organization#. The formula for the computation of the process capability index is as follows.  https://www.easycalculation.com/statistics/cpk.png  In this case, the answer for the computational formula was 2.278, which is the definite value for the process capability index.  Further, there was a need to compute the effectiveness of the process in attaining the desired outcomes. It entails the functionality of the process and all factors that align with its deliverables. Hence, the performance rate of the process is computed using the formula below:  https://www.isixsigma.com/wp-content/uploads/2010/02/PP-equation.gif  It is crucial to determine *Pp* since it factors the *s* value and determines its effectiveness in a specific period. In this case, the *Pp* provides reliable information that aids in deciding on the deviation of the actual data. In instances where there is a high risk, the process requires implementing proper control methods such as the use of the six-sigma model.  The following formula computes the capability rate of *Ppk.*  https://www.isixsigma.com/wp-content/uploads/images/stories/migrated/graphics/1105g.gif  **References**  Dunn, A., Grosse, S. D., & Zuvekas, S. H. (2018). I am adjusting health expenditures for inflation: a review of measures for health services research in the United States. *Health services research*, *53*(1), 175-196. <https://pubmed.ncbi.nlm.nih.gov/27873305/>  Jin, X., Fan, J., & Chow, T. W. (2018). Fault detection for rolling-element bearings using multivariate statistical process control methods. *IEEE Transactions on Instrumentation and Measurement*, *68*(9), 3128-3136. <https://scholars.cityu.edu.hk/en/publications/fault-detection-for-rollingelement-bearings-using-multivariate-statistical-process-control-methods(bc7db329-be3d-4f2f-8d78-8f941143b18f).html>  Lim, S. A. H., Priyono, A., & Mohamad, S. F. (2019, April). Introducing a Six Sigma Process Control Technique in a Food Production Line: Step-by-step Guideline and Critical Elements of the Implementation. In *2019 IEEE 6th International Conference on Industrial Engineering and Applications (ICIEA)* (pp. 338-342). IEEE. <http://psasir.upm.edu.my/id/eprint/36316/>  Qiu, P. (2018). Some perspectives on nonparametric statistical process control. *Journal of Quality Technology*, *50*(1), 49-65. <https://www.tandfonline.com/doi/full/10.1080/00224065.2018.1404315> |

**Cite** references to support your assignment.

**Format** your citations according to APA guidelines.

**Submit**your assignment.