

A Preamble to Quality Assurance in Service Industry

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Offshoring has moved beyond labour cost arbitrage. With growing emphasis on value added services, quality delivery and cost benefit, quality check process gains importance in the absence of clear distinction between quality check and quality assurance.

Quality assurance encompasses a wide array of topics and this document is a primer, creating a base for discussion, training and process improvement.



Fig 1: Quality Assurance - High Level Classification

Fig 1 decomposes quality assurance in to four high levels

Process activity during a quality check can be performed at one or more instances of a process life cycle. Type and amount of activities involved in a process along with the flow pattern are a few factors which help decide the number of instances. The process depicted below helps disconnect such number of instances with the quality check process, and to visualise and build a skeletal structure.

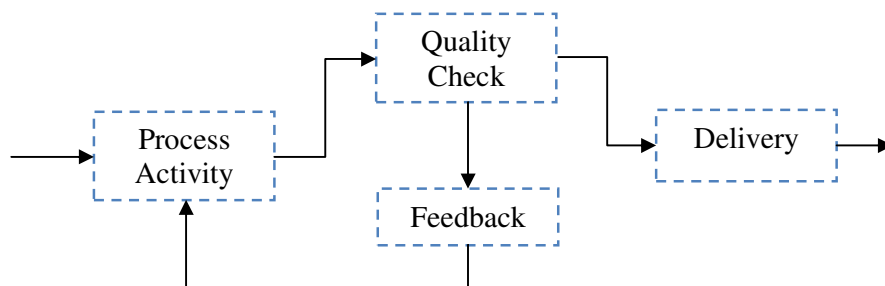


Fig 2: Quality Check Process - High Level Flow

Quality check is an important activity; we showcase its' output.

Components of quality check can be simply understood by asking some basic questions. Why? what? which? when? who? how?

Why?

The industry sells service; quality of service is the metric.

What?

Checks are performed on two things, product and process. The translations could be many. E.g.

- Financial, procedural and coding
- Most Critical, critical and general

It is extremely important to know the effects of poor quality before a QAP (Quality Assurance Process) design. Derivatives of known/ estimated effects are criticality of measurements, scale requirement and method of measurement.

Product requirements have specification limits and specification limits mostly come with some amount of known allowance for exception cases. QAP should ably distinguish exceptions, create control limits significantly lesser than the specification limits and raise alarms. Audits too are a type of process quality check.

Product specifications were always part of the contract but the requirements to include process as is increasing. Knowledge of how a process is performed gives confidence on the output. Inclusion of indicators that account performance of process activities are an important part of QAP design.

Which (how much)?

Sampling is an activity of selecting few units from the overall population to measure and estimate population characteristics. Few benefits of sampling against considering the population are, 'reduced cost', 'speed of analysis' and 'greater scope for analysis'.

Sampling can be performed in several ways to suit varied process requirements. Some points to keep in mind while selecting a sampling technique are homogeneity of the population under consideration in terms of

- Operating conditions
- Training methodologies
- Experience and
- Past performance
- Unit definition

Who?

In any manual operation, how depends on who and who depends on how. So, it is important to get both right. A lot of responsibility and knowledge is required for such a role. It is also extremely important to calibrate personnel at this level for a consistent and predictable measure of performance.

Few qualifications are,

- Process knowledge
- Exposure to varied situations/ exceptions
- Eye for detail
- Consistency in decision making
- Logical and analytical reasoning

When (how often)?

How often should a process be checked is a factor of time, process criticality and requirement. A few factors of time are,

- Process cycle time
- Output rate of the process
- Quality check cycle time
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What after Quality Check?

An genuine process error or a defective product need not be a contract violation. Importance of including process in documented contracts is pressed by the potential usage of rebuttal process. A product feature arising of out-of-scope process often produce noise. Maintaining and communicating time stamped information on process activities, regulations, customer requirements and changed requirement helps reduce noise and put forth true and more often, a better picture of performance.

Output of quality check shows the symptom of process performance. To get to the cause, is what analysis is used for. A good metric system assures the availability of data essential for meaningful analysis. Metrics and analytics require detailed discussions on their own.

Data collection and quality check tools is part of measuring system discussions.. Spend on quality check is hard to sell; extra spend is extra hard to sell. Most preferred (ideal) way is of course automation and transaction system is the best measurement system. But, transaction systems are generally out of control of the service provider. Most, finally end-up with office spreadsheet solutions e.g. MS Excel. Consider following points before you choose an application (apart from cost)...

- Amount of data to be stored
- Criticality of data/ data integrity/ security features
- System load (number of simultaneous users)
- User friendliness
- System maintenance effort
- Reporting options
- Compatibility with other applications

Ignored indications of data, unimplemented suggestions of analysis add cost to the process. An analysis is only as good as it is accepted. A well balanced communication channel needs to be maintained for effective benefits of analysis. Reports and their visualisation, performance reviews and discussions, learning forums are a few suggested tools of communication.

Most defects produced ultimately lead to either a gap in QAP (improvement opportunity) or a gap in QAP implementation (mistake proofing). In other words, a change in act is inevitable. Thus, 'Quality Assurance Plan' is a live document.

Too many gaps in the QAP lead to redesign and a few gaps lead to tweaking. Study and analyse on the effects of change on process performance is required. A Cost benefit analysis is also recommended before any changes to the system are considered.

Conclusion

Quality assurance plan is a good extension of process and product FMEA A good quality assurance plan reduces the cost of quality check.

(Note: Authors have not directly referred to any other existing papers/articles while writing this paper. If it matches with the views expressed in any existing articles, it is purely coincidental)
