

Quality Assurance vs Quality Control

By Fahad Usmani — 74 Comments



A few years back while I was in my ISO 9001 training course, I met with many professionals involved in quality management. They were all from different backgrounds and were working in different fields.

During these discussions I met with a guy and we started talking. He told me that he was working as a QA/QC engineer in his company.

QA/QC stands for quality assurance and quality control.

I asked him about his job responsibilities and what he does.

He replied that he walks around and sees if everything is going on as planned or not.

He checks the items for correctness, and if he finds any deviation from the specifications, he will take **corrective action**.

I said fine, this takes care of the quality control part of your job, what about quality assurance?

I again got the same reply.

Many time it happens that professionals who work as a QA or QC or QA/QC engineer are not well aware of their job responsibilities. They do not understand the difference between the responsibilities of quality assurance and quality control functions, although the difference between them is pretty clear.

This issue is very common in small and small to medium sized organizations where the organization usually doesn't have resources to hire QA and QC engineers separately.

In such situations the person may have the title of QA and working as QC and sometimes QC working as QA, or maybe worse.

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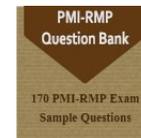
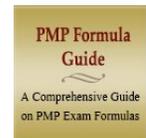
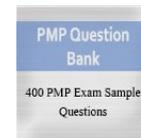


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This kind of ambiguity is not good for the project and may affect the quality of the deliverable as well as the success of the project.

As both processes sound similar, are interlinked and are interdependent, many professionals find it difficult to distinguish them.

Quality assurance is about the process of managing quality and quality control is used to verify the correctness and quality of the product.

Anyway, in this blog post I'm going to explain to you these two quality management processes in detail, and I hope it will help you understand these processes better.

Before we start discussing quality assurance and quality control in detail, let's understand the "quality" part first.

What is Quality?

There has been a lot of research on this topic and lot has been written about quality by many quality experts.

Here I will give you a few definitions of quality and then I will discuss the concept.

The most important and accepted definition of quality is given by Mr. Philip B. Crosby which says quality is "Conformance to requirements."

According to ISO 8402:1996 (Quality Management and Quality Assurance Vocabulary standard), "Quality is the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs."

According to ISO 9000:2000 (Set of International Quality Standards and Guidelines for Quality Management Systems), "Quality is the degree to which a set of inherent (existing) characteristics fulfils requirements."

Put more simply, you can say that quality is about meeting the customers' requirements and the deliverable being fit for use.

If a product meets or exceeds customers' requirements you can say that the product is of high quality. However, if it is not meeting its stated requirements the product is of low quality.

Keep in mind that, regardless of the [grade, the quality should be high](#). In any case the quality cannot be compromised.

Quality Assurance

We have discussed the term quality which simply means "fitness to use and conform to requirements."

What is meant by "assurance?"

Put more simply, it is a surety or trust. This is an act of giving confidence that you can believe in.

So, you can say that quality assurance assures the quality of the product. This process ensures that the product comes out from the process defect free and conforms to all stated requirements.

Quality assurance is a process based approach whose prime objective is to prevent defects in deliverables in the planning stage to avoid rework, which costs a lot.

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Quality assurance is a proactive process and it emphasizes planning, documenting, and finalizing the guidelines that will be necessary to assure the quality. This process starts at the very beginning of the project to understand the product's requirements and expectations.

Once all requirements and expectations are identified, a plan is developed to meet these requirements and expectations.

Tools Used in the Quality Assurance Process

There are basically three tools used in quality management: quality audit, process analysis, and quality management and control tools.

In quality audit, a team of external experts come and review the process and procedures. If they find any discrepancies, they will suggest corrective action. They may also suggest an improvement in the process.

Quality audit is a very good tool to ensure that the best practice and approved procedures are being followed.

In process analysis you analyze the process to find any improvements, discover the root cause of any problem that occurred, and identify any non-value added activities.

Quality management and control tools include various diagrammatic techniques which help you find ideas, help you make decisions, and prioritize issues.

Some examples of quality management and control tools are affinity diagram, tree diagram, network diagram, etc.

Quality Control

As you know, quality assurance is a process based approach; on the other hand, quality control is a product based approach. Quality control is concerned with the operational activities and techniques that are used to fulfill the quality requirements.

Quality control functions start once the project work has begun. Quality control is a reactive approach and helps you find defects in deliverables.

The objective of the quality control process is to make sure that the deliverables are defect free and acceptable as per the quality requirements. If the deliverable has a defect, you will take any suitable corrective action.

The quality control process has two objectives. The first objective is to find any defects in the product and correct them. The second objective is to validate the deliverable.

Quality assurance and quality control are dependent on each other. The quality control process receives input from the quality assurance process, and in turn gives its feedback to the quality assurance process so that the quality assurance can validate the operational process.

For example, if the project team finds a defect during the project execution, they will correct it and the feedback will be sent to the quality assurance team. The quality assurance people will investigate the cause of this defect and they will take corrective and/or preventive action in the process so this defect will never happen again in the future.

Once the process is updated, the quality control people will follow the process defined by the quality assurance team so the defect does not recur.

So you see, the quality assurance process takes input from the quality control process, and the quality control process takes input from the quality assurance process.

Tools Used in the Quality Control Process

Generally you use three main techniques for the quality control process. These techniques are inspection, statistical sampling, and seven basic tools of quality.

In inspection you physically examine the deliverable for any defects and to see if it matches the requirements.

In statistical sampling you select a random number of items from a batch and inspect them for any defects and conformance.

Seven basic tools of quality are [scatter diagram](#), [control chart](#), histogram, checklist, pareto diagram, [cause and effect analysis](#), and flow chart. These tools help you find defects and conformance of the product.

The Difference Between Quality Assurance and Quality Control

The following are a few differences between the quality assurance and quality control processes:

- Quality assurance focuses on defect prevention and quality control focuses on defect identification.
- In quality assurance, you check if the plan was efficient to avoid any anticipated defect. In quality control, you try to find defects and correct them while making the product.
- Quality assurance is a proactive process while quality control is a reactive process.
- Quality assurance is a process based approach while quality control is a product based approach.
- Quality assurance involves processes managing quality, and quality control is used to verify the quality of the product.
- Quality audit is an example of quality assurance. Inspection and testing are examples of the quality control process.

Now we come to the benefits of these processes.

The Benefits of Quality Assurance and Quality Control

The following are a few benefits of these processes:

- They give you a high quality output.
- They eliminate waste.
- They increase the efficiency of operations.
- They provide customer satisfaction, which affects your brand and helps you grow your business.
- Less rework and after-sale support is required. This will help you save a lot of money.
- They encourage a high level of confidence and a motivated team.

Quality assurance and quality control are closely related and their objective is also the same, i.e. to deliver a defect-free product.

Both processes are an integral part of a quality management plan and complement each other. Failing to apply either of them will result in a failure of quality management on the project.

Summary

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Quality assurance and quality control processes are intended to make a product defect-free and ensure it conforms to requirements. The purpose of both processes is the same, however the approach is different. Quality assurance is a process based approach and quality control is a product based approach. Quality assurance designs a process so that the product coming from this process is defect free, while quality control checks the product when you are producing it so no defected product gets into the market.

These processes have important roles in the success of your project. Their effectiveness can only be achieved they are well understood by the organization and the team performing the job.

There is another process, "validate scope", which might be combined with quality assurance and quality control. So, I have written another blog post to explain it as well.

Visit: [Quality Control and Validate Scope](#)

Here is where this blog post on quality assurance and quality control ends. If you have something to share, you can do so through the comments section.



Comments

Jacqui Yoon says

September 21, 2012 at 8:48 AM

Thank you for posting your blog and sharing your insights and well organized thoughts and explanations. I wish I had come across your blog earlier in my travels, for today I failed my first attempt at passing the PMP exam. I was ill prepared, was too dependent on self-study via an internet website and life happens too often when one is trying to dig a hole and study in it...life always finds you to drag you away from all the fun of studying. Anyhoo, love your writing style which is not too pedantic and is not a repeat of what is found in the PMBOK which is a dread of a read for me. I never took the time to really discern between the two and it came to haunt me today.

Reply

Fahad Usmani says

September 22, 2012 at 7:39 AM

Hello Jacqui,

I am very sorry to hear that you failed the PMP test in your first attempt. However, you still have you more attempts left with you.

Now, it is time for you take firm determination to pass the PMP exam. Schedule the exam and start preparing for it and let me know if you require any kind of assistance from me.

Good luck.

Reply

Ebi says

January 24, 2017 at 1:07 PM

Where can I obtain this certification and what are the requirements

Reply

Fahad Usmani says

January 26, 2017 at 2:11 PM

You can read all FAQs here:

<https://pmstudycircle.com/pmp-faqs/>

Reply

Ashraf Ali Khanzada says

September 22, 2012 at 11:16 PM

Understood. Very well written. Crystal clear now.

Thanks a lot.

Reply

Fahad Usmani says

September 23, 2012 at 12:33 PM

You are welcome.

Reply

Taseer says

September 23, 2012 at 7:11 PM

Really good

Reply

singh says

October 6, 2012 at 5:23 PM

best page on the net, regarding QA vs QC , thanks.

Reply

Fahad Usmani says

October 7, 2012 at 7:31 AM

Thanks for your comment.

Reply

Saleem Angillath says

October 8, 2012 at 7:27 AM

Hello Fahad

I passed the PMP in first attempt. Your blog has helped me a lot in preparing for the exam. Thank you very much. Yours is an outstanding blog and very informative for all PMP aspirant and to others who are interested in PM. Well written and informative. Still i'm following your blog for latest articles on PMP. All the best and expecting more from you.

Regards

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Saleem Angillath

[Reply](#)

Fahad Usmani says

October 8, 2012 at 8:53 PM

Congratulations Saleem for passing the PMP Exam!

I hope this certification will help you to grow your career. Thanks for sharing your happiness here at PMSC.

Stay in touch.

Fahad

[Reply](#)

Sagar says

November 28, 2012 at 1:13 PM

Excellent Article. Very informative and crystal clear. Thanks Fahad

[Reply](#)

Manoj says

December 26, 2012 at 2:52 PM

Bang on Target !!!!!!!!!

[Reply](#)

Ravindra says

January 3, 2013 at 5:05 AM

Fahad,

I do find your articles good. For some reason, I am not able to understand this article. Can you please help me?

I understand that the QA ensures that the processes are set correctly to develop the product and the QC ensures that the final product is as per the requirements or not. Is my understanding correct?

I did not understand how QA takes inputs from QC and QC takes inputs from QA. Can you give me an example? Thanks for your help.

[Reply](#)

Fahad Usmani says

January 3, 2013 at 9:44 AM

Hello Ravindra,

Your understanding is correct.

Quality Assurance develops the procedures, hence input for the Quality Control process.

During Quality Control, if you see that certain procedure needs some improvement or causing any trouble, then you can provide feedback to Quality Assurance to improve the procedures, hence input to Quality Assurance.

Reply

Ravindra says

January 4, 2013 at 5:01 AM

Fahad,

Thanks a lot for your reply. It clears my doubt.

What is your suggestion on taking on-line training? Now, I am doing the preparation on my own and don't know whether i am in the correct direction. Any suggestions you can give would be appreciated.

Thanks.

Reply

Fahad Usmani says

January 4, 2013 at 8:24 PM

It is your choice that whether you choose online course or live classroom training program. Both programs have their own merits and demerits.

Online programs are cheaper, convenient and flexible but lack the interactivity.

Classroom training programs are costly, held on fixed schedule and usually at big cities.

Regarding your preparation for the PMP exam, I have written a series of blog posts, you can visit them by clicking below given link.

<https://pmstudycircle.com/2012/04/how-to-prepare-for-the-pmp-cert-exam-pass-it-and-become-a-pmp-part-1>

Hope it helps.

Reply

sri says

February 11, 2013 at 5:56 PM

thanks for detail explanation..Much Appreciated

Reply

Vijay says

April 6, 2013 at 1:49 PM

Help me to answer this question

Joe is a project manager on an industrial design project. He has found a pattern of defects occurring in all of his projects over the past few years and he thinks there might be a problem in the process his company is using that is causing it. He uses Ishikawa diagrams to come up with the root cause for this trend over projects so that he can make recommendations for process changes to avoid this problem in the future. What process is he doing?

B. Perform Quality Assurance

C. Perform Quality Control

D. Qualitative Risk Analysis

I found that answer is B, but why ?...In PMBOK, under Quality Control (8.3.2.1) cause and effect daigram's are explainedso doesn't it fall under Quality control ...?

Thanks in advance.

Reply

Fahad Usmani says

April 7, 2013 at 1:27 PM

See what the Joe is doing. He is only reviewing the processes used by his company so that the defects (occurred in past projects) could be removed. This is the job of quality assurance to develop a process in such way to avoid any defect.

In Quality Control Process, the project manager takes the sample or randomly checks the process in running project.

Therefore, the answer B is correct.

Reply

Vijay says

April 7, 2013 at 3:57 PM

Thank you. This says that we need to read question carefully!!!. After your comment, I read the question again and I agree with answer. Thank you again.

Reply

Fahad Usmani says

April 7, 2013 at 8:20 PM

You are welcome.

Reply

Abhilash VJ says

July 4, 2013 at 11:26 AM

Hi Fahad,

I'm a Recruitment Consultant in the oil & gas industry.

This blog is fantastic and very well explained!!

Thank you very much!

Regards,
Abhilash VJ

Reply

Fahad Usmani says

July 5, 2013 at 2:55 PM

Thanks.

Reply

Prasanna Kumar KR says

July 8, 2013 at 9:41 PM

Hi Fahad,

Just wanted to say the super work you are doing by providing clear info in your blogs. I just came to know about this website yesterday, one day before my exam... I spent about 2 – 3 hours reading all your articles, which made concepts crystal clear and I passed PMP today. Keep up the excellent work 😊

Regards,

Prasanna Kumar K R, PMP

Reply

Fahad Usmani says

July 9, 2013 at 12:49 PM

Congratulations Prasanna and thanks for your comments...

Reply

Daleep says

July 15, 2013 at 4:08 PM

Going for exam in next 2 days.... I must say your articles and blogs are really helping thanks for great work!

Reply

Fahad Usmani says

July 16, 2013 at 10:52 AM

Hello Daleep,

Good Luck for your exam.

Hope to see you here again once you pass the exam.

Reply

SARIKA says

April 19, 2014 at 9:15 AM

very good job Fahad.

I am glad I found your website

Reply

Fahad Usmani says

April 19, 2014 at 7:55 PM

You are welcome Sarika.

[Reply](#)

Imad alsaeedi says

April 29, 2014 at 9:29 PM

Very good informations and very simple to understand
Thank you very much Fahad

[Reply](#)

Fahad Usmani says

April 30, 2014 at 1:56 PM

Thanks Imad.

[Reply](#)

Iftikhar Ali says

June 7, 2014 at 3:10 PM

Today I can say I am QA/QC inspector but after reading your blog not before.
I love your comprehensive words which very simple & understood for all.
I love ? with fahad usmani blog.

[Reply](#)

Fahad Usmani says

June 8, 2014 at 10:07 AM

I am glad that you liked my blog Iftikhar.

[Reply](#)

Basheer says

March 23, 2015 at 9:56 AM

Assalaamu alaikkum Fahad,

I just joined in one of the IT company as QA Engineer. The company develops website required for one of the university. There is no QA department as of now. As QA Engineer what are the process that i should introduce here.

Thanks and Regards
Basheer

[Reply](#)

Fahad Usmani says

March 28, 2015 at 11:13 PM

Wa-Assalam Basheer,

First of all you should check all procedures. There must be some procedures. Go and review those procedures, and check if they are following these procedures.

Reply

Bhavik Shah says

April 24, 2015 at 10:44 PM

Hello Fahad,

QA process using any tool of Quality management and control quality process.

My query is : whether Quality Assurance process is using 7 basic quality tools(any of 7) ?

Reply

Fahad Usmani says

April 30, 2015 at 8:38 AM

These processes are interdependent on each other, so they may use any tool depending on the situation.

Reply

Amita says

July 15, 2015 at 9:22 PM

Thanks Fahad. Excellent explanations... not just this one but all the Blog posts... Thanks much.

Reply

Fahad Usmani says

July 15, 2015 at 9:54 PM

You are welcome Amita.

Reply

divkumar says

November 24, 2015 at 7:42 PM

thnxx for inform sir.

which is the good field in working QA or QC

Reply

Fahad Usmani says

November 28, 2015 at 11:43 AM

Both fields are good.

Reply

sakthimurugan says

December 10, 2015 at 5:50 AM

clear explanation

Reply

Fahad Usmani says

December 13, 2015 at 7:37 AM

Thanks Sakthimurugan.

Reply

YJL says

December 15, 2015 at 8:38 AM

Wow! I just have to say how impressed I am with the way you explain the differences clearly and easily.

I am so grateful for stumbling upon your blog before my exam in 3 days! Thank you!

Reply

Fahad Usmani says

December 18, 2015 at 12:41 PM

You are welcome YJL. Hope you would have been passed the exam.

Reply

William Vargas says

January 6, 2016 at 9:26 PM

I am reading all your PMP Certification Exam Study Notes and they are very useful and clear. I am preparing to take the exam in about 2 months, I will read every note but if you have more tips, I would really appreciate them!

Thanks for help us!

Pura vida (I am from Costa Rica)

Reply

Fahad Usmani says

January 9, 2016 at 12:14 PM

You are welcome William.

You can download my free eBook on A2z on PMP exam and go through it. This book will help you in preparing the exam.

Let me know if you have any specific question.

Reply

Arpan Magoo says

January 10, 2016 at 11:59 AM

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It has very useful information as i am willing to appear for this exam.

Reply

Fahad Usmani says

January 12, 2016 at 12:06 PM

I am glad Arpan that you find my blog useful.

Reply

MOHAMED says

January 18, 2016 at 10:02 AM

God blesses you,thanks for the very detailed clarification.

Reply

Fahad Usmani says

January 18, 2016 at 11:21 AM

You are welcome Mohamed.

Reply

Fida Hussain says

January 21, 2016 at 5:24 PM

Very useful knowledge. Thanks.

Reply

Fahad Usmani says

January 22, 2016 at 2:12 PM

You are welcome Fida.

Reply

abbey says

March 24, 2016 at 5:23 PM

i am looking for an affordable online courses on Quality management, six sigma or any other related courses. kindly provide links.

Reply

Fahad Usmani says

March 26, 2016 at 1:09 PM

The below given page has some course on six sigma and quality management:

<https://pmstudycircle.com/pdu/>

Reply

Annie says

April 5, 2016 at 6:04 PM

Hi Fahad,

Thanks for this well-written article, it's straight-forward and easier to grasp the key differences than PMBOK. Your website is a great tool for me in preparing PMP exam.

Reply

Fahad Usmani says

April 6, 2016 at 8:01 AM

You are welcome Annie.

Let me know if you need any further help from me.

Reply

Christopher Dingle says

April 17, 2016 at 1:05 PM

Hi Fahad

Really like your clear and relevant article on quality assurance.

Quality assurance might be compared to the direct and manage process of quality control.

Reply

Fahad Usmani says

April 20, 2016 at 7:29 AM

Thanks Christopher for your comment.

Reply

Aren says

November 2, 2016 at 8:47 PM

If Risk Audit is done in the Controlling group, why is Quality Audit done in Executing?

I am taking the exam next week, thanks for your blogs!

Reply

Fahad Usmani says

November 3, 2016 at 8:18 AM

Quality audit is a quality assurance function not quality control, that is why it is performed in execution phase.

Reply

Aren says

November 4, 2016 at 12:46 AM

Fahad,

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Could you please contrast Risk Audit with Quality Audit? I understand "audit" to be more of an inspection, or a reactive task compared to a proactive task. Thus I would assume all audits to be in the control process group.

Thank you!

Reply

Aren says

November 4, 2016 at 10:59 PM

Fahad,

After working on your sample questions from your eBook, I realize Procurement Audit is in the Close Procurements group, so now there is an audit activity in three different groups. I understand now, but maybe a discussion on the different types of audits might be helpful.

Thanks again!

Reply

Fahad Usmani says

November 6, 2016 at 8:50 AM

Good idea. Sure I will write all types of audit happening in different phases/process of a project.

Reply

Aren says

December 29, 2016 at 5:10 PM

Fahad,

I just wanted to write back, I passed the exam on my first try! Please continue your hard work here.

Reply

Fahad Usmani says

January 1, 2017 at 12:27 AM

Congratulations Aren on passing the PMP exam and thanks for your comment.

Reply

Sumaya says

November 18, 2016 at 9:53 AM

Thx. This post is indeed informative and crystal clear. Exactly what I needed as I start my journey as a quality assurer

Reply

400 PMP Exam Sample Questions Try It Out

Fahad Usmani says

November 20, 2016 at 1:41 PM

You are welcome Sumaya.

Reply

Atef, Mohamed says

December 30, 2016 at 8:21 AM

Sir you said that in quality assurance we plan for processes, how can we say that quality assurance is an execution process

Reply

Atef, Mohamed says

December 30, 2016 at 8:28 AM

As you said, "In quality assurance, you plan to avoid the defect in the planning phase. In quality control, you try to find defects and correct them while making the product.". Pmbook says quality assurance is execution process

Reply

Fahad Usmani says

January 1, 2017 at 12:30 AM

In quality assurance, during the execution phase you check that if the project team is following your plans and procedure correctly.

The statement is corrected.

Reply

Tadesse Dirba (Ethiopia) says

January 10, 2017 at 10:31 PM

I am working on road CONSTRUCTION supervision with ambiguities on both QA and QC. You really solved my confusions. Now both of them are clear for me.
God bless you so much.

Reply

Fahad Usmani says

January 11, 2017 at 10:31 AM

I am glad Tadesse that I could be of some help to you.

Reply

Leave a Reply

Your email address will not be published. Required fields are marked *

Comment

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Name *

Email *



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