Quality

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**What is Quality?**

Banalities

Basically, nobody knows

There is no clear definition of quality. It is potential, but not defined, designed or measured.

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**You Need a Clear Definition**

- If you cannot define, you cannot measure it.
- If you cannot measure it, you cannot achieve it.
- You do not know when you are progressing.
- You do not know when you have arrived.
- You cannot demonstrate it.

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**Banalities as Definitions**

- Quality is Everyone’s Business
- We have Quality People
- As per Requirements
- Bigger, Better, Faster and Cheaper
- First Time Right
- Good enough

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**Quality is a satisfied client**
Clients are satisfied through “good” products and services

Successful projects depend on good management helping good people using good technology to follow good value-adding practices

Good products and services are achieved through successful projects

[Diagram showing triangle labeled People, Process, Technology]
Quality is a satisfied employee

Satisfaction is a job well done
Satisfaction is more time to create, design and build, less firefighting and fixing.

Quality is happiness!

- What makes you happy?
- What makes your clients happy?
- What makes your management happy?
- What makes your team members happy?
- What makes your shareholders happy?

Satisfaction is reduced stress.
Productivity
Job satisfaction is critical to the willingness to put in the extra effort required.
Job satisfaction equates with happiness.
Job satisfaction includes a healthy work-life balance.
Your client’s position defines a different point of view.

Key Skills for Client Management

- Facts and Figures
  - Understand the data to achieve or provide the best.
  - Examine information and assess risk.

- Negotiating
  - Involved in all the various affected departments.
  - Resolves conflicts.

- Listening
  - Determines the needs.
  - Asks questions to leaders and users.

Q = P / X

Quality is your perceived added value.
It demands a good understanding of your clients’ needs.

Quality needs to be defined and measured if it is to be achieved.
Quality Factors and Quality Criteria

- Correctness
- Efficiency
- Expandability
- Flexibility
- Integrity
- Interoperability
- Maintainability
- Manageability
- Portability
- Reliability
- Responsiveness
- Safety
- Survivability
- Usability
- Verifiability
- Accuracy
- Anomaly Management
- Augmentability
- Commonality
- Completeness
- Consistency
- Distribution
- Document Quality
- Efficiency
- Functional scope
- Generality
- Independence
- Modularity
- Operability
- Safety Management
- Self-Descriptive
- Simplicity
- Support
- System Accessibility
- System Compatibility
- Trustability
- Training
- Usability
- Visibility
- and more

These are all characteristics of quality (or qualities) but they are not Quality.
Understanding User Needs

Operational Needs
- How secure is it?
- How often will it fail?
- Can it survive during failure?
- How easy is it to use?

Maintenance Needs
- Evolutionary Needs
  - How easy is it to repair?
  - How easy is it to expand?
  - How easy is it to change?
  - How easy is it to transport?
  - Is it recyclable in other systems?

Operational Needs
- How much is needed in the way of resources?
- Does it comply with requirements?
- Does it prevent hazards?
- Does it interface easily?

Management Needs
- Is performance verification easy?
- Is the product easily managed?

Understand the Client's Perception of Quality

Adding Value to your Clients’ Business

Gain Loyalty
Innovate and Implement
Anticipate Client Needs

Meet your Contractual Obligations

Most Client Requirements
Determine Requirements and Expectations
Identify Clients and Stakeholders
Your initial perceived quality may attract clients, your realized quality will retain your clients and grow your market.
Define, Design, Develop
Quality Delivered

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Standards are Necessary
The basic ideas behind standards

Compliance is not Quality!
The change needs to happen in your team, in your project, in your reality - and not in some consultant’s theory!

Standards serve a Purpose
Reliability
Guarantee
Predictability

Warranty
Consistency
To Requirements

Security
Safety
Structure

until they don’t
"It is only through enforced standardization of methods, enforced adoption of the best implements and working conditions and enforced cooperation that this faster work can be assured"  
(Frederick Taylor, 1856-1915)
The Fundamentals of Quality

Every product needs a combination of three key elements of quality:

- Firmitas
- Utilitas
- Veritas

Reliability

Most of the traditional quality characteristics focus on the stability and reliability of the product when under stress.
Utility

Business analysts and requirements management focus primarily on the utility of the product and whether it will adequately and demonstrably satisfy the client’s needs as well as requirements and expectations.

Desirability

One aspect that is frequently forgotten in the many industries is the desirability of the finished product.

- What is the “attract” factor that you are adding to your client’s local jeopardy?
- How much are you willing to invest on going beyond the functional and utilitarian in order to seduce your clients?
It's OK to want to be the Cheapest

But it's not OK not to know
If nobody knows or agrees on your primary quality objectives, you will fail

It's OK to want to be whatever you want to be

Define the Job To be Done

what do your clients really want?
How can you best respond to that need or desire?
Define the Job to be Done

What do your clients really want?
How can you best respond to that need or desire?
Apply the principle of parsimony: entities should not be multiplied without necessity

Most organizations remain firmly rooted in the 17th Century!

Traditional Western Analytical Deconstructionism

Break things down into their components
If you understand how every component works, you must therefore understand how the system works
Newtonian Physics

The world functions according to set mathematical principles and laws.

The laws are immutable.

This includes the laws of physics as well as the laws of the Christian understanding of divine creation and design.

Darwinian Evolution

The world is based on processes that evolve from:
  - Random changes
  - Eliminating mistakes
  - Keeping what gives an advantage

Multiplication of successful combinations

Most developments are wasted, a few succeed.

Interoception

1884 – William James and Carl Lange on interoception and interoceptive signalling:
Emotions are the result of the brain reacting to physical changes and a Bayesian analysis of context (you’re sad because you are crying).

Quantum Mechanics

Tiny changes have immense effects – most of them unforeseeable at the start.
Something can be in two contradictory beliefs at the same time - until observed and measured.
Microscopic chaos creates macroscopic probabilistic order.
Ecosystems

Bringing everything together because everything impacts everything else.

Society is an ecosystem, an office is an ecosystem, a product is an ecosystem, a service is an ecosystem.

Every component depends on the whole.

Support the People
Doing the Work

Satisfied Customer

Good Products
and Services

Successful Projects

People

Processes

Technology

Model

Culture

Finance

Needs

Abilities

Standard

People

Process

Technology

People

Process

Technology

People

Process

Technology

People

Process

Technology
Culture is not individual
- Think of society not as a collection of individuals, but as a system
- We are defined by our relationships to others
- We are defined by our communication channels
- We are defined by our contacts
- We are defined by what we take away from our past

Your experience defines your connections, your points of view, your relationships
- You can see and understand things that no one else can see or understand
- You are unique

You are the unique combination of every experience you have had in life, your DNA and ancestry, your education, every book you have read, every trip you have taken, every meal you have shared

When multiple understandings cross you have
- Convergence
- Entanglement
- A point of potential creativity
If these are not visible and supported, you lose your team’s creativity and purpose. It’s just a group of people who happen to be working on the same stuff at the same time.

Traditional hierarchy does not support the workers

Wisdom is the innate knowledge you have that allows you to react successfully to unforeseen events. A group’s culture is the sum of its wisdom.

You must choose between organizing your team using a "divide and conquer" approach to knowledge or an approach that actively seeks out knowledge points and potential for discovery.

Traditional hierarchy does not support the workers
Manage the Design You Want

Design your Business
Design the Culture
Design the Process
Design the Organization

The Key to Good Management

Your role is not to manage
Your role is not to measure
Your role is not to control
Your role is certainly not to bully
Your role is probably not to discipline
Your role is not even to motivate

Your role is to satisfy the innate desire people have to take pride in the value of their work
Lead
Inspire
Motivate
Educate
Guide
Support
Act at all times as if you were one of your team members and the customer is watching!
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Understand the need

Enter the Mind...

Understand the WOW

Understand the Value

Understand the WOW!
Don't just do what your clients want, do something they need
Add to your product an extra feature that they did not expect
Identify early what you are going to do that differentiates you from everyone else
Good enough is never good enough!
Understand the Value

Estimate the value with (at least) the same rigor you use to estimate the cost.

If the cost is greater than the value, it doesn’t matter how cheap it is.

If the value is greater than the cost, it doesn’t matter how expensive it is.

Manage the Value

- Communicate the long-term value
- Integrate knowledge gain in the value stream
- Define stakeholders’ needs and expectations
- Establish systems that allow to do it right
- Reduce the time to market
- Level scheduling and work-in-progress
- Reduce waste
- Sustain transformation

Plan for Value

Value + added to the market = 

Cost - reduced and work-in-progress
Financial Value is what someone is willing to pay for something

Cost Vs Value

How much should we invest before we have a client?
Estimating the Cost

This cost is estimated by various techniques based on historical data.

The result is dependent on experience and negotiation.

0 ½ 1 2 3 5 8
13 20 40 100 ∞

Why Not?

The potential value (Quality) to be developed is not be estimated using the same basic techniques as estimating the cost and effort required.

Estimating the Value

Value is the value you add to your products and services.

Quality needs to be determined and guided by the Cost of doing the work and the Price you can ask.

Developing quality increases the cost.

Value increases the price.

Business Value

Assign value points to:
- Pur(lulu)
- Features
- Capabilities
- Business

Sales Increase
Customer Experience

Different Businesses, different needs

- Define the quality needed for your clients using a business value matrix.
  - Start-up Business
  - Stable Business
  - Maturity Business
  - Declining Businesses

Key Performance Indicators

- What if you decide to measure each instead of cost?
- What if you decide to measure value instead of cost?

Use Cause and Effect Diagrams to understand the cost and Impact of Quality

Cost of Quality

- Cost of Customer
  - Cost of Inattention
  - Cost of Wasted
  - Cost of Lost Sales
  - Cost of Late Deliveries
  - Cost of Defective Products
  - Cost of Overproduction
  - Cost of Rejected Products

- Cost of Internal
  - Cost of Inefficiency
  - Cost of Retraining
  - Cost of Faulty Tools
  - Cost of Scrap

- Cost of Prevention
  - Cost of Quality audits
  - Cost of Prevention
  - Cost of Maintenance

- Cost of Process
  - Cost of Downtime
  - Cost of Rejection
  - Cost of Inspection

- Cost of Non-Conformance
  - Cost of Non-conformance
  - Cost of Non-conformance
  - Cost of Non-conformance

- Cost of Improvement
  - Cost of Improvement
  - Cost of Improvement
  - Cost of Improvement

- Cost of Lost Opportunity
  - Cost of Lost Opportunity
  - Cost of Lost Opportunity
  - Cost of Lost Opportunity
Interruptions

Doing one-time work accounting or estimation is the most productive way of doing an intellectual or creative job (like software development).

Each interruption, while giving the feeling of great start work, reduces the actual effectiveness of the team.

Defects and correction costs

Understanding where defects are being introduced into the product and that the cost of correction.

NPS

The Net Promoter Score measures what your clients really think of your company.

Every comment taken should include a request to respond, so that you can measure customer satisfaction in real time.

Employee Engagement

Assess employee engagement in the team and environment.

Can talk of annual reviews.
In Conclusion...

Estimating and measuring Quality is not more difficult than estimating and measuring delays and cost...

...if you define what you mean by Quality!