Design Thinking – Accelerating Ideation using Innovation
ABOUT QAI GLOBAL

MISSION
TO CREATE A MEASURABLE, AND SUSTAINABLE COMPETITIVE ADVANTAGE TO OUR CLIENTS

FOCUS
FACILITATING OPERATIONAL EXCELLENCE

PEOPLE
Software Engineering & Management
Innovation Management Design Thinking
Agile Methods & DevOps

PROCESS
Service Management
Project, Program & Portfolio Management
Software Testing & Quality

PERFORMANCE
Human Capability Management

PRACTICES

SOFTWARE ENGINEERING & MANAGEMENT

SERVICE MANAGEMENT

PROJECT, PROGRAM & PORTFOLIO MANAGEMENT

SOFTWARE TESTING & QUALITY

HUMAN CAPABILITY MANAGEMENT

SOLUTIONS

Career Framework Design
Skill Assessments
Learning Design
Learning Delivery (ILT)
Online Learning Certifications

Org. Assessment
Process Definition
Process Implementation
Process Benchmarking
Appraisals & Audits
Process Outsourcing

Metrics Program
Enabling High Maturity
Productivity Improvement
Workforce Transformation
Centers of Excellence
Design & Innovation

Multi-faceted interventions resulting in process improvements and innovation help organizations deliver business goals better, faster and cheaper.
## QUICK FACTS: QAI Trainings and Certifications

<table>
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<tr>
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QGLUE is the design and innovation venture of QAI.

QGLUE uses design to help businesses build services that people love and impact the world around us. Using human centered approach with robust methodology, QGLUE equips people to solve wicked problems by helping them reach a solution that is not just right, but also desirable with design thinking at the heart of it all. We aim to evangelize design and innovation that makes the world better designed and people happier.

QGLUE has conducted Workshops, Design Consultations, Briefings for Senior Management and equipped businesses to become design-led.

To know more about our offerings: [www.q-glue.com](http://www.q-glue.com)
### PARTIAL LIST OF ORGANISATIONS THAT ATTENDED QGLUE’S DESIGN THINKING WORKSHOPS

<table>
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</table>
Hello, my name is David P. Isaac

Consulting Partner and Practice Head
QAI GLOBAL

• Head of Customer Experience and Process Transformation with Reliance Infocomm
• NPD Expert with Godrej Appliances and pioneered the Pentacool Range of Refrigerators
• Innovation TRIZ Expert Certified Matriz Level 3
81% of executives surveyed place the personalized customer experience in their top three priorities for their organization, with 39% reporting it as top priority.

– Accenture

A total of 42 design firms have been acquired since 2004. 50% of which have been acquired within the last year with Accenture, Deloitte, IBM, Google, and Facebook as the most acquisitive.

– Design In-Tech Report
Design-led companies such as Apple, Coca-Cola, IBM, Nike, Procter & Gamble and Whirlpool have outperformed the S&P 500 over the past 10 years by an extraordinary 219%, according to a 2014 assessment by the Design Management Institute.

- SAP

90% of executives agreed that customer experience and engagement are objectives of corporation’s digital strategy.

- Deloitte
Why Design Thinking

• Today’s reality demands innovation and empathy for the customer from businesses.
• Customers are not only looking for the best service but also the best experience.
• Design Thinking addresses all pressing concerns and questions and divides insurmountable tasks into smaller doable tasks.
• Statistics and market research can give you certain insights, but spending time with the end-user, the insights become far more tangible.
• Failing fast and quickly through prototyping helps you eliminate weak areas.
• Design thinking breaks your preconceptions of what a good solution would be and unleashing new undiscovered possibilities. Leading you to a more desirable and human solution.
Hence design thinking is not about solving design problems.... It is about solving business problems with the design process.
Business Thinking

PROBLEM

SOLUTION

Design Thinking

PROBLEM

Understand Context

SOLUTION

SOLUTION
This is Design Thinking

- Business (Viability)
- People (Desirability)
- Technology (Feasibility)

Experience Innovation
From Thinking To Innovating
Frontstage
The part of your service that the client/customers can see and experience.

Backstage
The part of your service that happens "behind the scenes" and is not visible to the customer.

Blueprint
A breakdown of both the end-to-end customer experience as well as the surface-to-core backstage of your business process, systems, actors, and policies.

Journey
A customer's experience of your service.

Touchpoint
A single point of interaction between the customer and the service.

Channel
A specific medium in which interactions take place.
Problem Statement  |  Scenario Statement  |  Insights  |  Actors

**Experience Stages**

Customer Actions

Front Stage Staff

Back Stage Staff

Processes/Policies

Platforms/Tools

**Touchpoints**

Line of Interaction

Line of Visibility

Stages

#1  |  #2  |  #3

Customer Actions

Front Stage Staff

Back Stage Staff

Processes/Policies

Platforms/Tools

**Actors**

Role Needs/Motivations/Blockers

Role Needs/Motivations/Blockers

Role Needs/Motivations/Blockers

**Scenario Statement**

**Insights**

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## Writing a Problem statement - HMW

How might we…

<table>
<thead>
<tr>
<th>What problem needs solving or improvement?</th>
</tr>
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</table>

for…

<table>
<thead>
<tr>
<th>Which person is most affected by this?</th>
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</table>

[Which person is most affected?]

OR

Design a better way for…

<table>
<thead>
<tr>
<th>Which person is most affected?</th>
</tr>
</thead>
</table>

to…

<table>
<thead>
<tr>
<th>What does this person need to be able to do?</th>
</tr>
</thead>
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How might we provide a personalized experience for a senior retail store consumer?

Design a better way for a bank manager to immediately and effectively prioritize the most vital imminent threats.
ideation
## Current Idea Generation tools

<table>
<thead>
<tr>
<th>Brainstorming</th>
<th>Gamestorming</th>
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<tr>
<td>Sketchstorming</td>
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<td>Mind Mapping</td>
<td>Co-creation</td>
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<tr>
<td>Storyboarding</td>
<td>Workshops</td>
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<tr>
<td>Role Playing</td>
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</table>
Conventional Approach is Inefficient

The Innovation Challenge

- 3,000 Raw Ideas (Unwritten)
- 300 Ideas Submitted
- 125 Small Projects
- 9 Early Stage Development
- 4 Major Development
- 1.7 Launches
- 1 Success

...The problems that exist in the world today cannot be solved by the level of thinking that created them...

Albert Einstein
Teoriya Resheniya Izobretatel’skikh Zadach

Teoriya Zadach
Resheniya
Izobretat’elskikh

Theory Problem
Solving
Inventive

TRIZ
Origins of TRIZ

Genrich ALTSHULLER:
“Trial and Error Method today is considered as a synonym for Creativity. To increase productivity of intellectual work scientific approach should be applied….”

Altshuller started this scientific research in 1946. He was 20 years old...

1949 – First results and letter to Stalin.
1950 - Arrested. Sentence 25 years in prison.

Usefulness in industry applications was proved worldwide during last 60 years.
Innovation as an Algorithm

Key Findings

- Levels of invention
- Definition of inventive problem
- Patterns of invention
- Patterns of evolution

Patents initially reviewed by Altshuller (worldwide)

- Altshuller had access to 200,000 patents worldwide
- Of these 20% represented inventive problems
- He worked with these 40,000 patents to find the common denominator
Innovation as an Algorithm

General TRIZ Problem

Solutions suggested on how similar problems resolved in other industries, sciences & technologies

General TRIZ Solutions

Problem statement raised to higher level of abstraction

“Focusing the Creativity” Down to multiple new Solution paths

General flow of how TRIZ helps to resolve problems and focus thinking

Specific Problem

Specific Solution

Traditional Method Path: Trial & Error, Brainstorming, Lateral Thinking, etc

A reliable, repeatable & teachable method of innovative and inventive thinking usable by all
TRIZ Innovation - IDEA Generation aids

- Multiscreen diagram
- Defining an ideal system
- Function Diagram
- Contradiction thinking
- Resource thinking
- RCA+ Root Conflict Analysis
- 40 Inventive Principles to resolve contradictions
### Past
- **Supersystem**
  - Software, Servers, IT Device
  - Users, Desktops, Support
  - functions like HR, Trainer, QA
- **System**
  - Deskside support
- **Subsystem**
  - SME, Escalation team, paper
  - folders, Excel files, Regular
  - phone, email system, writing
  - pen and pads

### Present
- **Supersystem**
  - IT Device users, servers, networks,
  - CRM platform, support teams for
  - resolution (3rd Party), Admin team,
  - transportation team, IT
  - Communications, Onsite support
- **System**
  - IT IS Infrastructure support
- **Subsystem**
  - Analysts, Remedy – CRM,
  - ticketing tool, remote access
  - tools, Escalation team,
  - Knowledge base, ACD- Call
  - routers, desktops, virtual phones, emails

### Future
- **Supersystem**
  - IT Device users, Analyst,
  - Program systems
- **System**
  - Self detection and Healing IT
  - Systems
- **Subsystem**
  - KB, CMDB, AI to self learn
  - and deploy best solution,
  - IVR, IT Upgrades

---

**Multi-screen Diagram for – IT Infrastructure Support**
What is a Contradiction?

An improvement in one characteristic of a system results in the degradation of another characteristic.

If (we reinforce car body to make it bullet and bomb proof)

Then (the owner can feel more safe travelling on the road)

But (the vehicle fuel efficiency is compromised)
RCA+ for Lower accuracy in estimation of AD efforts
Selected Contradictions from RCA+ for Lower accuracy in estimation of AD efforts

- ESTIMATION MODEL IS WRONG
  -

- LESS EFFORT IN UPDATING OR CREATING THE MODEL
  +

  +/−

- NO ASSESSMENT OR REVIEW OF THE MODEL
  +/−

- IMPROPER PROJECT MANAGEMENT
  −

- PROVIDES FOR MORE FLEXIBILITY
  +

  +/−

- STEPS ARE NOT FOLLOWED RIGIDLY
  +/−
Resource Thinking

- Space
- Time
- System Resources
- Information
- Environmental Super-System Resources
- Mono-Bi-Poly Resources

Resources
Contradiction Matrix

- Contradiction Matrix is a matrix created by the founder of TRIZ (Theory of Inventive Problem Solving), G. H. Altshuller.
- Altshuller’s research found that there were 39-parameters like length, weight, reliability and so on.
- Altshuller also found out that inventors over time tended to prefer application of 40-principles.
- The Matrix is a summary representation of this research.
- It provides innovators with the triggers to resolve the contradictions.

- Altshuller’s was researching the patent database and investigating whether there were some commonalities in the types of problems faced by inventors and the principles used by them to resolve contradictions.
- His finding was that typically any problem can be summarized as a conflict between two parameters. If we increase the value of one parameter, it results in the deterioration of the other parameter.
Understanding the Matrix

- The image shows a snapshot of the Contradiction Matrix.
- The MS-Excel template with the explanation of the parameters and the descriptions of the 40-principles can be downloaded from the Attachments.
- We next explain the different parts of the template.
Organizations who have embraced TRIZ Innovation
Case Studies
Institutionalizing Design Thinking: SAP Experience

First hand experience of helping transform SAP

Objective: SAP infused Design Thinking to become a next generation company in the minds of its customers and partners.

Key Journey Points

1) All of SAP comprising of over 80,000 people globally have undergone Design Thinking training, and the skill is considered crucial for success.

2) The entire customer facing organization including, Sales, Presales, Consulting, Value Engineering, Industry teams, were trained to become prepared to sell for the future.

3) In India alone over 500 people in the customer operation, including the entire Sales, Presales teams were trained. 10 people were trained to become design thinking champions.

4) All large internal initiatives of SAP, including strategy discussions, account planning, GTM sessions, transformation initiatives, product development, entrepreneurship, adopted design thinking.

5) Design Thinking was consistently credited with influencing over USD 1 Billion in revenue globally, and USD 15-20 Million in India.
Institutionalizing Design Thinking: Chemicals Org

First hand experience of playing a role in transforming a specialty chemicals major.

Objective: To help chemicals major infuse Design Thinking in its daily operations.

Key Journey Points

1) The journey began with a simple training session of members of the IT organization, with the sponsorship of the CIO.
2) The IT team on finding value from the training, decided to do a pilot with re-imagining the supply chain for the future. The pilot lead to a award winning global solution.
3) 50 members of the leadership team then underwent 3 day training at the Hasso Platner Institute in Germany.
4) Pilots were done across the organization including procurement, project sales, customer experience, Internet of Things, finance and more.
5) More trainings followed, the organization has since gone on to establish a concrete eco-system for Design Thinking inside their organization.
Best Wishes and Thank You!

David P. Isaac

Consulting Partner and Practice Head
QAI GLOBAL and QGLUE
David.Pisaac@qaiglobal.com
Look out for more **Design and Innovation workshops by David P. Isaac**

Design Thinking: Ideation Phase | Bangalore 15\textsuperscript{th}-16\textsuperscript{th} February  
Design Thinking: Ideation Phase | Mumbai 16\textsuperscript{th}-17\textsuperscript{th} March 

Write to us: Email: customer_relations@q-glue.com  
Visit our website: www.q-glue.com  
Call: 1800-3000-9111
THANK YOU

QAI USA
Major Plaza I
5728 Major Boulevard,
Suite 602
Orlando, Florida 32819
Phone: +407-363-1111

QAI Singapore
391B Orchard Road
#23-01, Ngee Ann City
Tower B,
Singapore - 238874
Phone:+65-6225-8139

QAI India
1010 - 1012, Ansai Towers,
38 Nehru Place
New Delhi - 110019, India
Phone: +91- 11- 26219792,
26220580

QAI China
Rm. 1211, No. 498 Guoshoujing Rd.
Shanghai , Zhangjiang Hi-Tech Park,
Pudong New Area,
Shanghai, China: 201203
Phone : +86-21-51314155

QAI Dubai
Unit No: 3O-01-1575 Jewellery & Gemplex
3 Plot No: DMCC-PH2-J&GPlexS
Jewellery & Gemplex Dubai
United Arab Emirates