

AMC Bridge Services: Expertise Series  
**EPIISODE 1: BUGBUSTERS**

**ONE BUG CAN AFFECT HUNDREDS OF CUSTOMERS  
AND COST YOU A FORTUNE!**

an ancient proverb



# \$128,000

a cost of a bug found after release

They trust us to handle their projects effectively



## INVOLVE QA

FROM THE INITIAL STAGE

AND REDUCE THE COST

OF FIXING POST-RELEASE

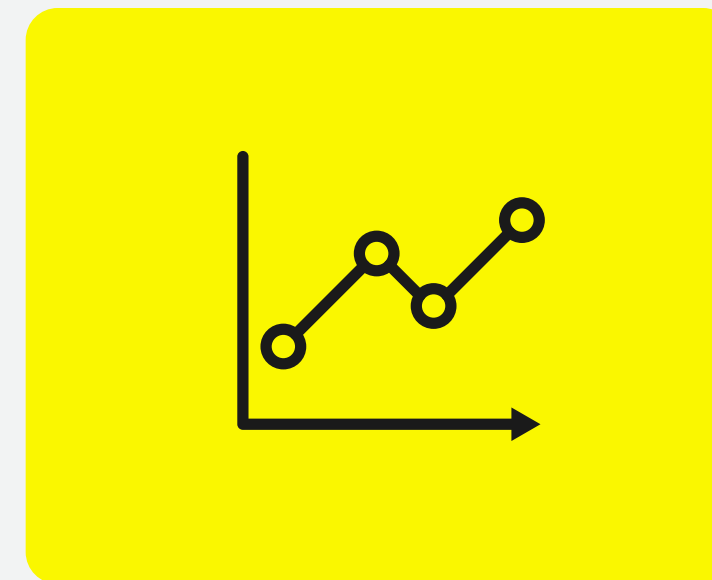
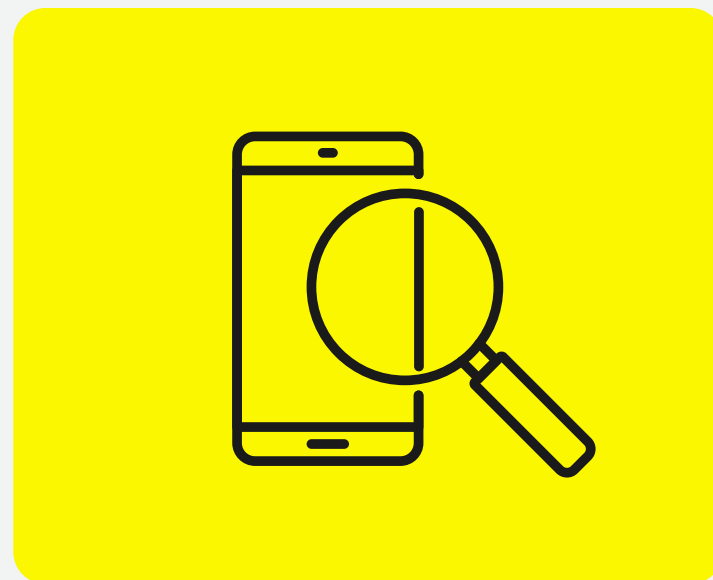
DEFECTS BY UP TO

# 640 TIMES.

# ALL SOFTWARE HAS BUGS

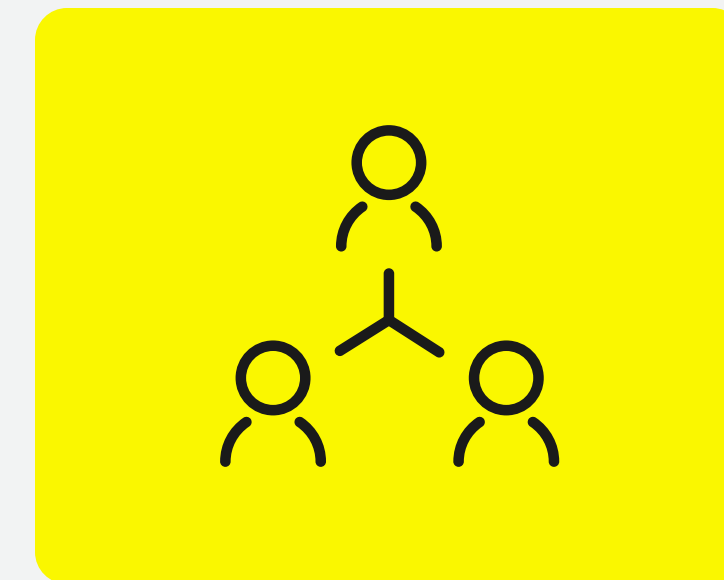
## THE RIGHT QUESTIONS ARE:

How can we **minimize**  
or **prevent** them?



What are the **risks** if  
we don't?

How will it **impact** your **team**, your  
**budget**, and your company's **reputation**?



# PREVENTION IS BETTER THAN CURE

One of the most frequent questions we receive here at AMC Bridge goes something like this:



**WHAT WILL  
HAPPEN IF WE  
DO NOT HAVE A  
QA PROCEDURE  
IN PLACE?**

Well, the consequences can be significant:



## INCREASED COST

As software progresses through development, the **cost** of fixing bugs **rises**. Bugs found in later stages need **more time** and **effort** to identify, analyze, and rectify. The more complex or integrated your software, the harder it is to unravel a bug.



## LATE RELEASES

If significant bugs are discovered close to a release deadline, the **release** may need to be **postponed** to ensure that the software meets quality standards. This **impacts** project **timelines** and customer satisfaction.



## POOR QUALITY

If **bugs** remain **undetected**, they result in a **lower-quality product** and impact the user experience, functionality, and overall **reliability** of the **software**.



## REPUTATIONAL DAMAGE

Bugs discovered **after release** negatively impact the user experience, cause **customer dissatisfaction**, and **damage** the **reputation** of the **product**, the development team, and the **company**.

Without QA services, software development becomes a **minefield** of **errors** that cause **significant disruptions** to your and your customer's business.

Do you know the **actual cost** of **failing to catch** bugs in the right place at the right time?

Let's say a simple bug is identified **during coding** and takes **5 hours** to fix in QA and developer time. Let's assume the cost is

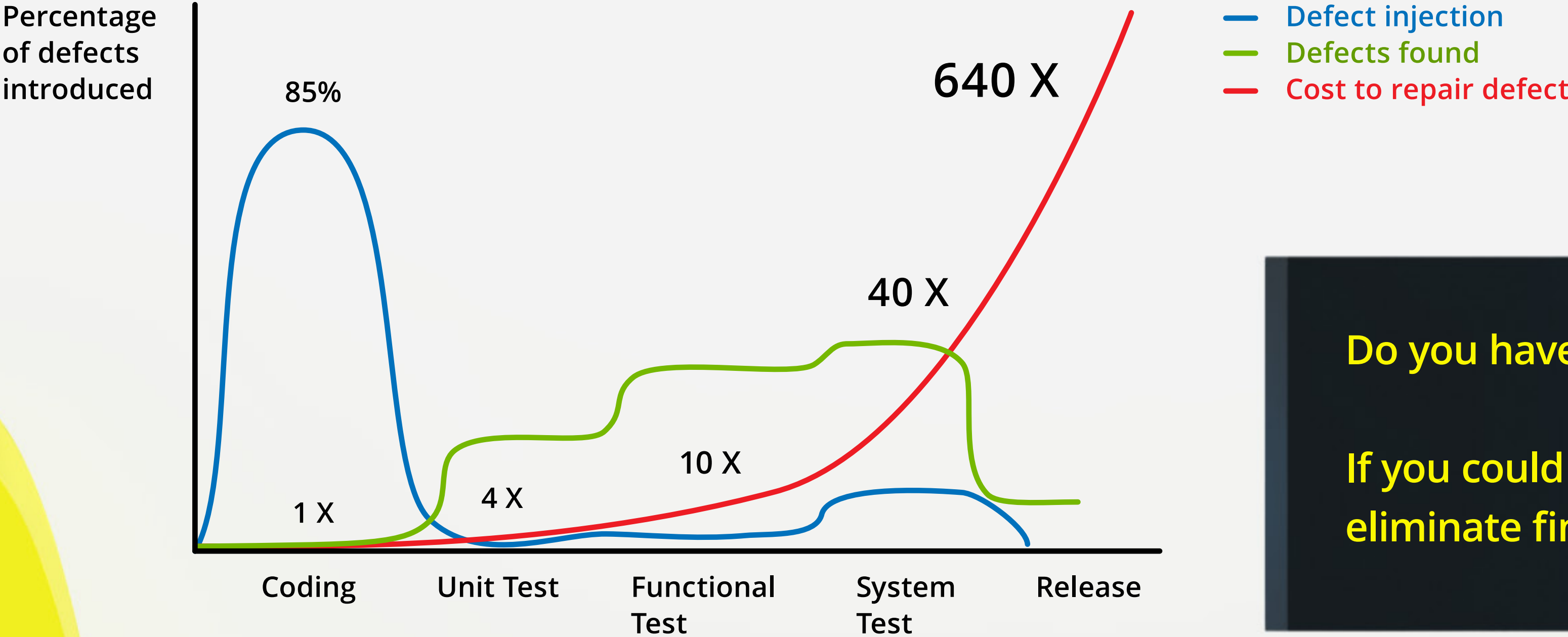
**\$200**

If found during **later stages**, fixing it can take 40 times longer, roughly **200 hours** and costing

**\$8,000**

If it's not discovered until **after release** it can cost an astronomical sum, in our example an overwhelming **3,200 hours** (20 man-months) and

**\$128,000**



Source: Applied Software Measurement, Capers Jones

Do you have the resources or capacity to handle this?

If you could avoid these bugs, minimize risks, and eliminate financial loss, would it be worth trying?

# A RISK TO YOUR BUDGET AND YOUR REPUTATION

You may be asking yourself,

"WHY DO I NEED DEDICATED QA SERVICES  
WHEN MY DEVELOPMENT TEAM CAN  
HANDLE TESTING?"

While your team may identify bugs, Quality Assurance isn't just about testing.



Here are a few reasons why incorporating QA services right from the beginning of your project is crucial:

## REQUIREMENTS ANALYSIS

Involving QA in the requirements discussion helps ensure that product requirements are clear, complete, and well-defined, including the definition of "Done". It helps prevent defects from occurring in the first place, mitigates the risk of failure, and minimizes costly rework later on.

## OBJECTIVE TESTING

Your development team might have subjective opinions of the software, which leads to biased evaluations and critical issues being overlooked.

## THOROUGH TESTING

Developers might not have enough time to perform comprehensive testing and only test the Happy Path. Missed bugs lead to delays in release and impact your revenue.

## BUG REPRODUCTION PROBLEMS

Without documented testing, it can be challenging to reproduce bugs, leading to extra time investigating the issues.

## POOR USER EXPERIENCE

Software that is not tested thoroughly can lead to poor user experience, impacting customer satisfaction.

## INCREASE EFFICIENCY

Incorporating QA services from the beginning helps streamline the development process, increasing efficiency for developers and reducing total development time.

A balance between testing by developers and dedicated QA professionals is the optimal approach. It ensures that testing is comprehensive, unbiased, and efficient while also allowing developers to focus on coding and innovation.



# A WISE INVESTMENT FOR LONG-TERM SUCCESS

Investing in QA helps build a resilient release process and win the market.

## PREDICT BUDGET AND SAVE TIME

Without suitable QA, you cannot accurately predict and manage your development budget. Overspending can occur if your developers waste valuable time discovering bugs instead of writing code or if you have to find and fix them after coding is completed.



## IDENTIFY AND MITIGATE RISKS

Identify potential risks and issues early in the development cycle and save time, money, and resources.

## IMPROVE PRODUCT QUALITY

Include QA early on and rest assured the product is being developed with quality in mind from the outset, rather than trying to find and fix issues later on.



# BUGBUSTERS IN ACTION: FRESHLY-SMASHED CUSTOMER EXPERIENCE

## CLIENT

The client is a **machinery company** that produces and sells both **hardware and software** supporting the processes.



## CHALLENGE

The client's main business is hardware; the **focus on software was secondary**, and the QA processes were not correctly established.

The **ratio of QA engineers to developers was too low**: compared to the recommended ratio of 1:3/1:4, the actual ratio was 1:10.

The QA situation was stuck due to **budgetary and priority reasons**, and many QA engineers used ad-hoc methods, preferring to test on real hardware after development, which was more of an acceptance check than quality assurance.



## WHAT WAS DONE

The AMC Bridge team **investigated all projects** in the client's product teams and **analyzed the software development process** from requirements engineering to release management.

Based on our findings, we **created a strategy to improve the process** and incorporate Quality Assurance activities appropriately and efficiently throughout development.

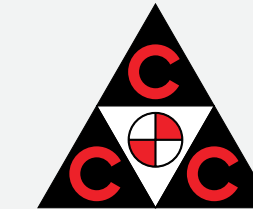
## RESULT

The **project was a success**, and our proposal **provided a roadmap** for the client to **improve their development and QA processes** in the future.

Although we cannot share the exact findings for each project, we can confidently say that our actions have satisfied those who entrusted us with their projects.



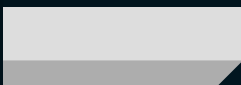
# THEY TRUST US



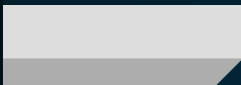
# WHY AMC BRIDGE

## SKILLS AND EXPERTISE

### UNKNOWN FREELANCE QA



**Expertise limited** to executing pre-defined test cases without a deep understanding of the system under test



**General** software **knowledge**

### AMC BRIDGE QAE



**Dedicated Quality Assurance department** led by Director with **15 years experience**



**Deep understanding** of software development and testing methodologies



Extensive project experience and advanced **technical skills**



Knowledge of mechanical and architectural design and other **engineering-specific areas**



Highly trained **mechanical engineers** and **AEC professionals** (we even have 2 **PhDs** on the team)



TECHNOLOGIES

01  
10

- **Limited** access/**knowledge** of advanced testing tools and technologiesv
- Relies on **basic tools** or manual testing

— **Proficiency** with a **wide range** of **advanced tools**, using automation tools and performance testing frameworks to enhance testing efficiency

APPROACH



- Follows a **reactive approach**, focusing on finding defects after they occur

— Involved from the **initial stages** of development, contributing to **requirement analysis**, risk assessment, and test planning, test data creation

— **Proactive** and systematic approach to testing

**Integrating QA** services into development as an ongoing process throughout the **production cycle** is the single most effective way to **prevent errors, catch bugs** early on and, ultimately, **decrease costs**, improve timelines, increase quality, and deliver a **better user experience**.



However, it all starts with Business Analysis – watch this space...



Well, if you have made it this far, we applaud you for sticking with us through this whole episode.



Still have questions or need more information? We're just a message away.



Feel free to reach out to us for a discussion.

