Testing-as-a-Service

GTM

Market Dynamics

$48 Million

*per year on average **saved by organizations with advanced digital resilience capabilities** on downtime costs compared to beginning organizations*

97 percent

*of software, professionals are using automation, and the **future of automation testing is going scriptless.***

AI-driven testing

*solutions adoption are going to expand at a CAGR of almost **40%** between **2022 and 2030.***
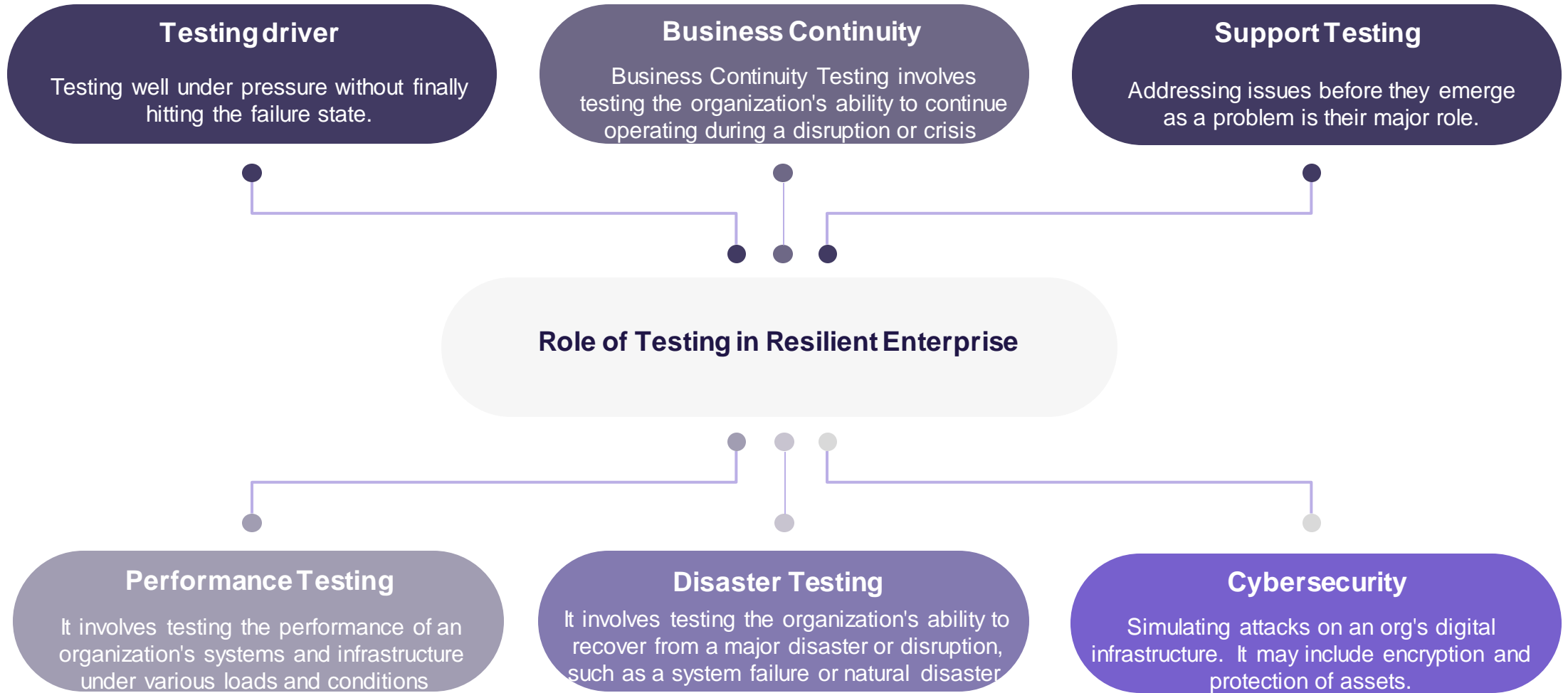
$41 Billion

*market size of **DevSecOps** is projected to CAGR of 30.76% from 2022 to 2030.*

$20 Billion

*The global **cyber insurance market** is expected to reach by 2025*

Testing in Resilient Enterprise

Testing driver

Testing well under pressure without finally hitting the failure state.

Business Continuity

Business Continuity Testing involves testing the organization's ability to continue operating during a disruption or crisis

Support Testing

Addressing issues before they emerge as a problem is their major role.

Role of Testing in Resilient Enterprise

Performance Testing

It involves testing the performance of an organization's systems and infrastructure under various loads and conditions

Disaster Testing

It involves testing the organization's ability to recover from a major disaster or disruption, such as a system failure or natural disaster

Cybersecurity

Simulating attacks on an org's digital infrastructure. It may include encryption and protection of assets.

Digital Resiliency

*IDC defines a digitally resilient organization as one that **rapidly adapts to business disruptions, leverages digital capabilities to maintain continuous business operations, and quickly adjusts to take advantage of changed conditions and capture new opportunities.***

DIGITAL RESILIENCE

Understand
An individual understands when they are at risk online and can make informed decisions about the digital space, they are in.

Know
An individual knows what to do to seek help from a range of appropriate sources

Learn
An individual learn from their experiences and is able to adapt their future choices, where possible

Recover
An individual can recover when things go wrong online by receiving the appropriate level of support to aid recovery

Pillars of Digital Resiliency

Maintenance
Ensures business steadiness in any organization

Cybersecurity
Cyber security alongside encryption

Data & Privacy
Digital infrastructure for data encryption and privacy

Infrastructure
Business continuity planning to help sustain internal business

Compliance
Compliance to manage all governance and risks related to IT systems

Major Trends in the Testing World

Accelerating Time-to-Market with Shift Left Testing

Shifting testing activities earlier in the software development lifecycle, with the goal of identifying and addressing defects earlier and more efficiently.

Streamlining Cloud Deployments with Cloud-Native Testing

cloud-based infrastructure and services to conduct testing activities, with the goal of improving scalability, flexibility, and cost-effectiveness

Transforming Automation Testing and DevOps

Automation and DevOps Testing Agile is now linked to DevOps, and over 73% of organizations prioritize and incorporate this software testing trend into their processes helps to shorten their SDLC

Revolutionizing Software Testing with AI and ML

Testing to automate and enhance various testing activities, such as test case generation, test data generation, and defect detection

Rapid growth of Test-data management

Managing and maintaining test data, with the goal of ensuring that the data used for testing is accurate, consistent, and relevant.

Navigating the Cybersecurity Testing Landscape

Cybersecurity testing is anticipated to grow in the upcoming years due to the increased use of mobile devices, cloud computing, and the Internet of Things.

Key Challenges

Complexity & Unstable Environments

The complexity of modern software systems and the need to test across multiple platforms and devices. Teams face unstable environment setup issues that we need to prepare for most of what we have

Finding the right framework and tool

There are a lot of tools available, both licensed as well as open-source, which makes it difficult to choose. The choice of tool depends upon the kind of application and the extent of testing.

Inadequate testing infrastructure

Another major challenge in testing is a lack of infrastructure to enable proper test coverage and execution speed.

Problems with data reliance

One of the most challenging aspects of test automation is data management. When the test script is executed, the data must be in a specific state; otherwise, it can cause serious issues in several scenarios.

Undefined Quality Standards

Perfectly defined quality standards is not always the case which makes testing a real challenge. Undefined or poorly defined quality standards mean there is no clarity on testing requirements, specifications, guidelines, or characteristics.

Finding the right skills

Unskilled person may add more chaos than simplifying the testing work. This results in incomplete, insufficient, and ad-hoc testing throughout the Testing Life Cycle.
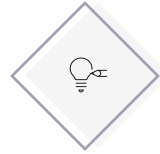
Digital Trends to address the Challenges
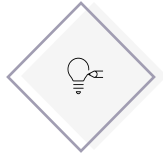
Transforming AI and ML in Testing Tools

AI and ML algorithms have enabled organizations to enhance the quality and reliability of their software, delivering it more quickly and efficiently

AI-powered testing tools that can automate repetitive tasks and improve test coverage.

## Help Teams Accelerate Secure Software Delivery with DevSecOps

Testing trends are moving towards a secure approach with DevSecOps, the modern software development methodology that prioritizes security by integrating it into every stage of the development process.
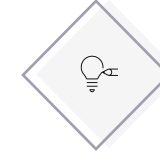
## The Wonder of Scriptless Automation in The Testing Landscape!

With scriptless automation testing thrown into the equation, the need for scripting and coding in software testing is eliminated.

It's intriguing because it minimizes routine testing efforts and helps businesses and testers automate test cases without paying attention to development.
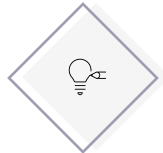
Uncover opportunities at scale with crowd testing

Leveraging the collaborative force of testers from around the world, and their unbiased feedback helps in integrate customers into the development process, gain real actionable insights from your users, and ultimately deliver a better customer experience.
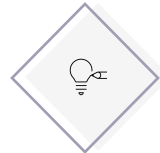
Advancements in Selenium 4

Selenium 4 represents a major leap forward in the Software Testing Industry, with a range of new features and enhancements designed to improve the user experience, test execution and reporting, concurrency, stability, and performance
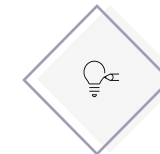
Raising the bar on security and performance with Blockchain Testing

An increasing number of companies are embracing blockchain testing tools, as it's a critical aspect of creating dependable blockchain-based applications that businesses can rely on to keep the safety and security of their products a priority.

brillio

How AI can be leveraged in Testing

Automate repetitive and testing tasks through **test automation**

Save lot of time and effort by **generating test cases**

Improve the quality and coverage by **generating realistic and diverse test data**

Prioritize tests based on their importance, risk, and likelihood of failure

Predict potential defects or failures based on past data and patterns

Automate the setup and configuration of test environments, which can be complex and time-consuming

30%

Reduction in testing time and costs through AI

99%

of the Software bugs can be detected by AI- tools, compared to 68% by manual testing

80%

Increase test coverage through AI-powered, ensuing all scenarios and edge cases are covered

85%

Reduced the testing effort through AI while prioritize them based on importance, risk and likelihood of failures

Brillio's Solution

Our Strategy

Brillio offers Testing as a Service with advanced automation and AI capabilities helping our customers to speed up the delivery timeline and drive cost efficiencies like never seen before

Automation at Scale

- Integrate the devops pipeline with automation suites covering unit testing, functional and non-functional testing.
- Maximize the coverage of scenarios by leveraging AI/ML to measure coverage and generate test cases to increase coverage

Testing elevated with AI

- Auto generation of unit and functional test cases.
- Test Suite coverage prediction
- Defect Prediction
- Test Data Generation & Management

TESTING AS A SERVICE

- Automated creation and destruction of test rigs for each test cycle
- Detect coverage trends and highlight any negative trends
- Dynamic prioritization of test cases based on change impact

Robust Framework

- Predict coverage anomalies
- Predict quality trends
- Hotspot predictions

Insights driven testing

Guiding principles

Automation

Enable AI in the SDLC life cycle to generate unit test cases, and functional test cases providing the ability to scale the automation test suite

Test Data Management

Generation of test data covering all the positive and negative testing scenarios and simulate all the possible data conditions

Coverage Audit

Leverage AI/ML to validate automation coverage and identify scenarios that need to be included

Quality Prediction

Ability to predict unstable/defective modules within an application and focus testing scenarios on those modules.

Predictive Test selection

Identifying the impacted functional modules due to code changes and executing the test scenarios for only those modules.

Testing Maturity

Traditional

Advanced Test Management

Manual / Functional Testing

Tool Based Automation

- Reduced Regression Cycle
- Assistive in Retest
- Manual Effort Reduction

Automation Frameworks & Accelerators

- Increased Test Coverage
- E2E Validations
- BDD Adoption
- Faster Time To Market

Continuous Testing

- Early Feed Back
- Continuous Testing
- Auto Test Executions
- Faster Time to Market

Test Data & Environment Management

- Synthetic Data Generation
- Auto Test Rigs
- Domain Specific
- Data Virtualization
- Data Integration

Cognitive Testing AI / Machine Learning

- Test Bots
- Assistive Automation
- User Pattern Based Script Generation
- Simulation of User Personas
- Self-healing test scripts
- Defect predictions
- Intelligent Dashboards

Solution/ Key features

Brillio offers Testing as a Service with advanced automation and AI capabilities helping our customers to speed up the delivery timeline and drive cost efficiencies. The Devops pipeline would be integrated with the testing capabilities.

Unit Test Case Generation

- Automatically generate Unit Test Cases for implemented code.
- Keep unit test coverage at the maximum level possible.

Functional Test Case Generation

- Automatically generate functional test cases for the user stories
- The suite might not be entirely automatable.

Test Data Generation

- Generate synthetic test data to cover all possible scenarios
- Adherence of compliance like PCI, HIPPA etc.

Automated Test Environment Provisioning

- Test grid to be stood up as part of the CI/CD pipeline
- Test grid destruction once testing cycle is completed

Quality Prediction

- Leverage AI to identify hotspots and areas which have quality issues
- Test grid destruction once testing cycle is completed

Test Suite Selection

- Dynamically select the test cases based on code changes
- Ensure relevant coverage in the expected areas

Value Proposition

AI into TaaS brings substantial value by enhancing test coverage, improving efficiency, optimizing costs, enabling scalability, supporting continuous testing, and delivering actionable insights

Test Coverage

AI algorithms can analyze large volumes of data and generate comprehensive test cases, improving the overall test coverage.

By exploring various scenarios and edge cases, AI-powered testing can uncover hidden defects that might be missed by manual testing.

Test efficiency

AI can automate repetitive and time-consuming testing tasks, accelerating the testing process.

With AI-powered test automation frameworks, organizations can execute tests faster and more frequently, leading to shorter test cycles and quicker software releases.

Defect Detection

AI techniques like machine learning can learn from historical data to identify patterns and anomalies in software behavior.

By analyzing system logs, user interactions, and other relevant data, AI-powered testing can proactively detect defects, predict potential failure points, and prioritize high-risk areas for testing

Cost optimization

TaaS powered by AI reduces manual effort and human intervention in testing activities.

This automation leads to cost savings by minimizing the need for large testing teams, reducing manual errors, and improving resource utilization

Quality Assurance

AI-driven analytics and reporting provide valuable insights into the quality of software applications.

By analyzing test data and performance metrics, AI-powered TaaS can offer actionable recommendations for improving software quality and stability.

Thank you…