

Innovation within testing as an answer to challenging market conditions

Ivan Ericsson – May 2009

What would the perfect test look like ?



Finds a (severe) defect (preferably two)...

Helps to find the defect cause (and suggest the fix)

Can be executed by another tester...

Is a reusable asset...

Is maintainable

Gives confidence in the application..

Embarrasses a developer..

Project Manager is sacked for not supporting testing earlier in the lifecycle

New investment gives test chance to prove it's worth... Defect discovery driven back in lifecycle...quality improves....

New PM doubles investment in testing

Case study excites market so much that test investment rockets as does application quality and business performance

Global recession ends due to testing improvements, projects are always delivered on time and production systems always work

Testing conferences are held every 2 weeks in Hawaii !!

The search for the perfect test



While we are looking for the ‘golden test’ there are ways in which we can encourage the market to look on innovation in testing as part of the solution to the challenges we all currently face.

So what are the challenges and what do they mean for us ??

60% of IT Projects fail to meet objectives” – Gartner

“90% of IT Projects delivered late” – Aberdeen

“50% of IT Projects delivered over budget” – Gartner

“40% of problems are found by end users” – Gartner

“50% of projects get rolled back” – Gartner

“44% of Software Projects are too expensive” - Standish Group

“7x more expensive to fix issues found in production” – Carnegie-Mellon

And testing in a recession ?



Increased demand to cut costs in testing and QA – make it faster, cheaper and use less resource

More short term, tactical spending – whereas testing often depends upon longer term strategic visions

More system integration and maintenance testing requirements

Market will be more attracted by commercial innovation than technical innovation

Increased use of non testers as testers

Two types of Innovation...

Technical Innovation

Commercial Innovation

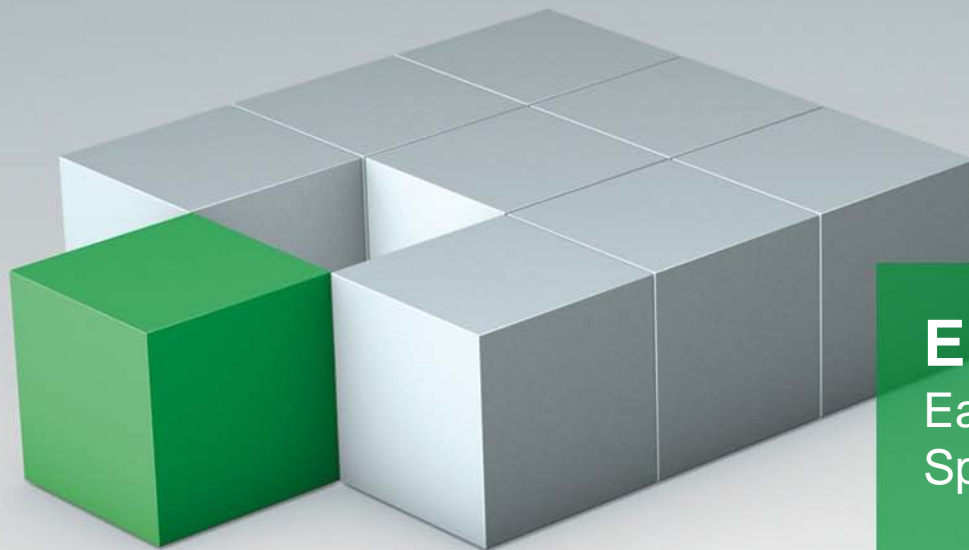
**New ways of delivering
testing services**

**New ways of selling
testing services**

**Technically
innovative
solutions**

**Commercially
& Technically
innovative
solutions**

**Commercially
innovative
solutions**



EEDwTCS

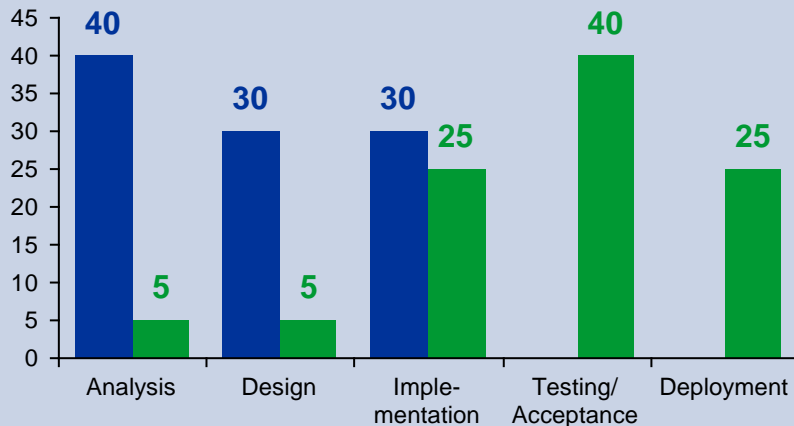
Early Error Detection with Test Case
Specification

2. Customer needs and market situation (1/5)

When software defect correction is postponed until deployment error correction cost rises exponentially.



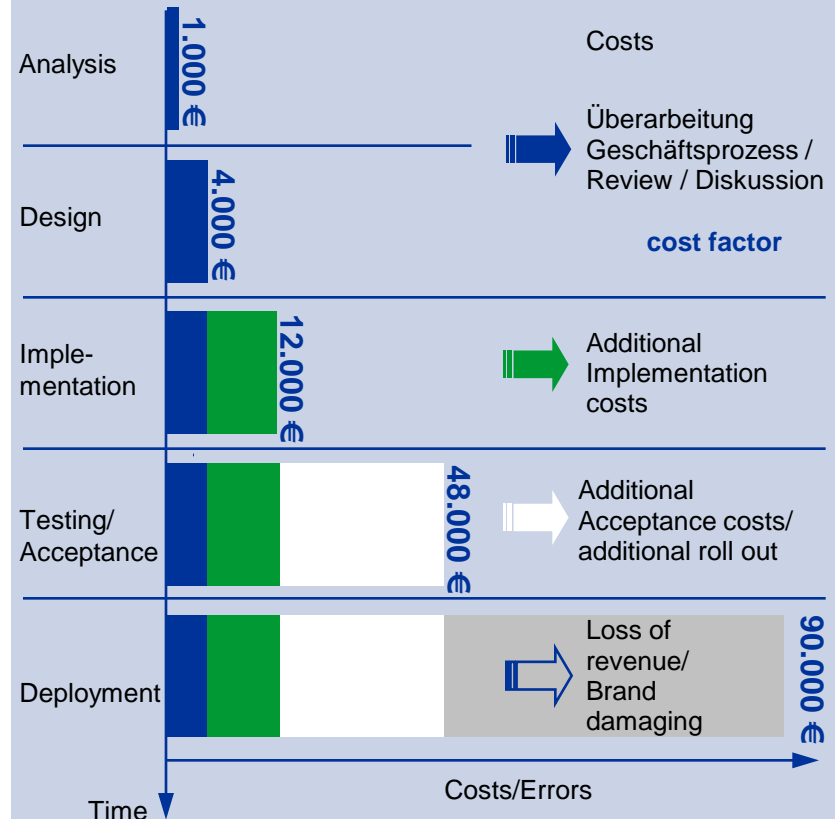
Typical defect distribution



- Typical distribution of error sources (%)
- Typical distribution of the discovered errors (%)

- Errors already occur in the early phases of the SW development process.
- 30% of errors are only initially in the implementation, testing and acceptance phase.
- 70 % of errors are originated during requirement specification (Analysis and Design): but normally only 10 % are found at that stage.

Defect correction costs factors (*)



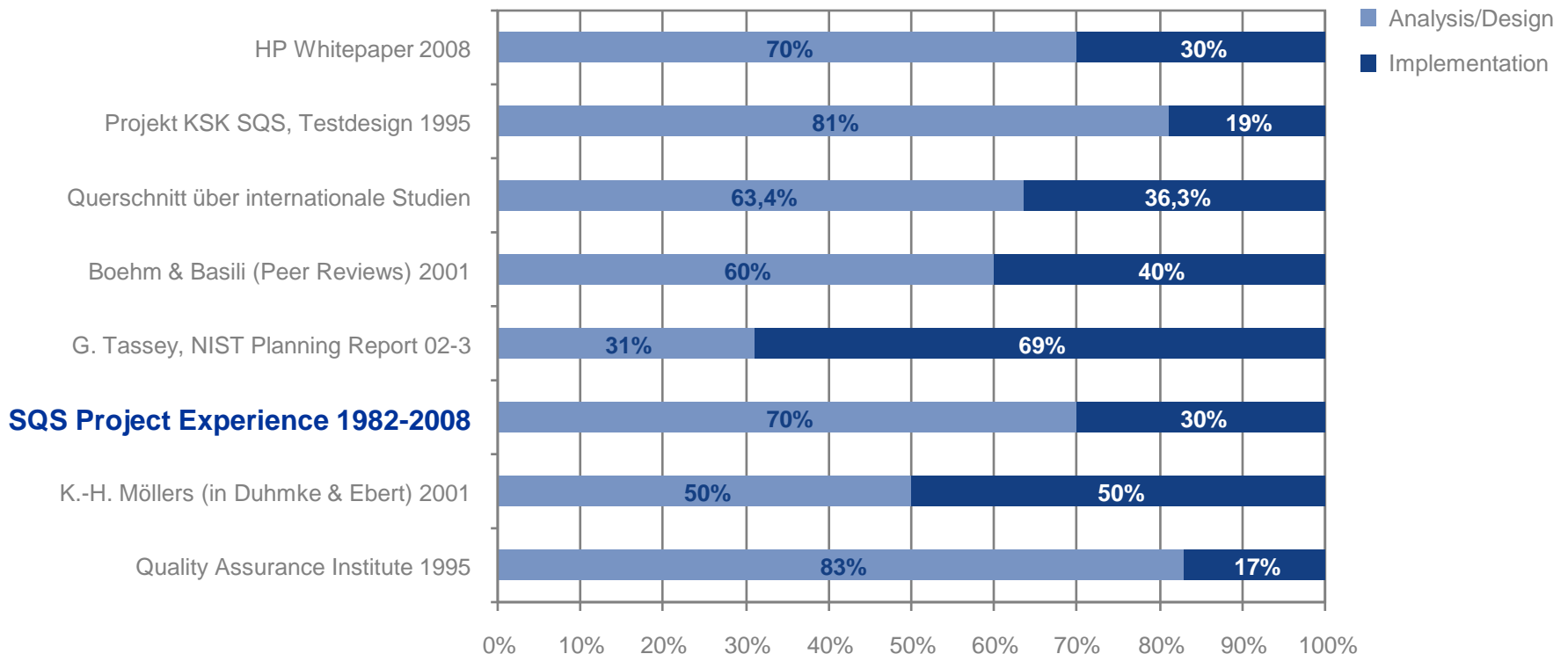
The earlier an error is detected, the lower the costs of its corrections

2. Customer needs and market situation (3/5)

Error distribution in the early phases of the application life cycle is validate by SQS project experience since 1982.



Comparison of error distribution between analysis/design and implementation



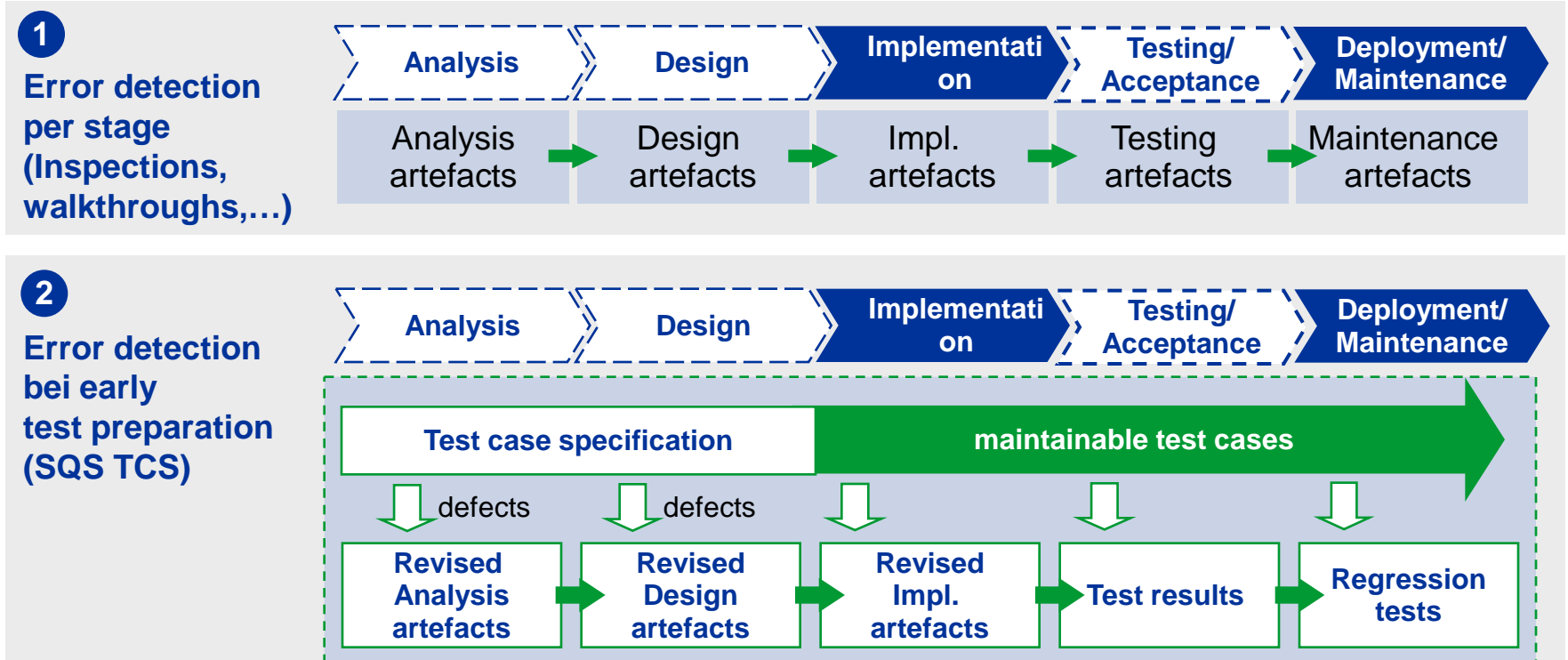
The right answer the strong error concentration in the early stage of development is Early Error Detection (EED)

2. Customer needs and market situation (4/5)

EED with Test case specification is a very effective method for detecting errors and test preparation in one.



There are two main approaches for early error detection independent of the process model:



EEDwTCS is executed on the basis of documented requirements specification during analysis and design in preparation of the testing phase.

TCS contributes to

- Higher defect detection rates in the early phases
- Early test preparation
- Maintainable test cases to be used along the complete life cycle.

3. Benefits of EED with TCS for the customer (1/2)

EED with TCS provides concrete benefits and ROI.



Benefits of of EED with TCS on the basis of a ROI calculation (I)

A SQS customer decides to do error detection in the analysis and design phase with the following indicators:

- Review of a analysis and requirement document with → 1,700 pages
- A page of the document contains approximately 50 lines → 85,000 lines
- Usually 1.5 -2.5 errors per 100 lines are found → 1,275 to 2,125 errors
- Detected errors introduced during analysis → 1,000 errors
- Detected errors introduced during design → 1,700 errors
- Cost per error for early error detection: → 110 €
- Cost per error for error correction in the analysis phase: → 100 €
- Cost per error for error correction in the design phase: → 400 €



Costs for detecting 2,700 errors	280,000 €
Costs for fixing 2,700 errors	+ 780,000 €
Total:	1,060,000 €

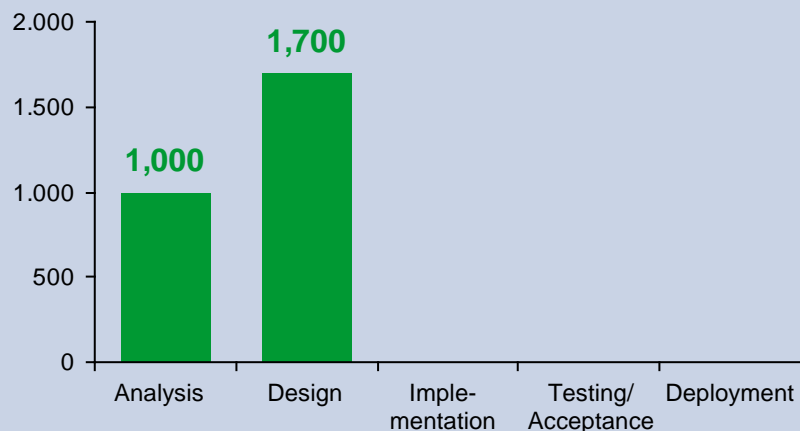
3. Benefits of EED with TCS for the customer (2/2)

A comparison of the error correction costs shows the high savings potential with EED.



ROI calculation of EED with TCS

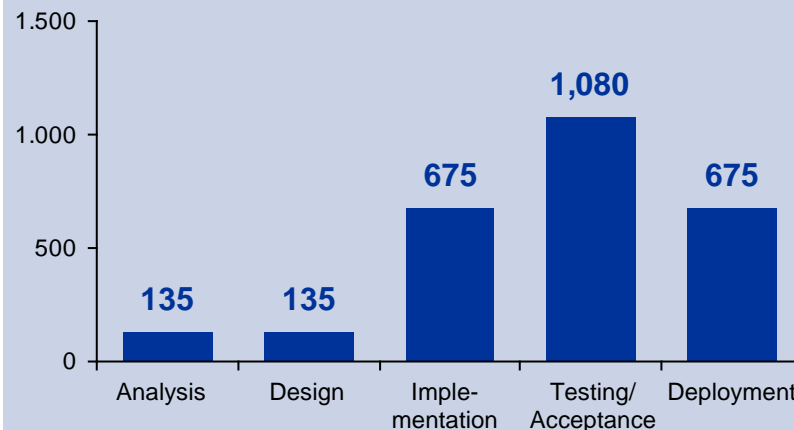
Distribution of the 2,700 errors with EED



Costs for detecting 2,700 errors:	280,000 €
Analysis:	$1,000 * 100 * 1 = 100,000 €$
Design:	$1,700 * 100 * 4 = 680,000 €$
Total:	1,060,000 €

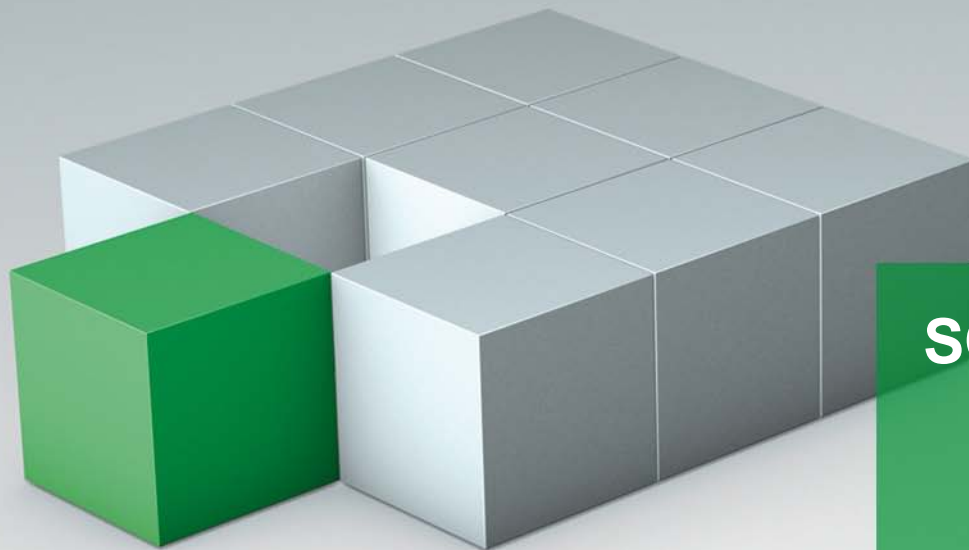
Assumption: errors, which are detected in later phases will not be considered in this calculation.
We make the comparison only with the 2,700 errors.

Distribution of the 2,700 errors without EED



Analysis:	$135 * 100 * 1 = 13,500 €$
Design:	$135 * 100 * 4 = 54,000 €$
Implementation:	$675 * 100 * 12 = 810,000 €$
Acceptance:	$1,080 * 100 * 48 = 5,184,000 €$
Deployment:	$(675 * 100 * 90)/4 = 1,518,750 €$ **
Total:	7,580,250 €

** Assumption: Every 4th error will be critical in the Deployment phase and demands a correction.



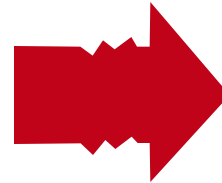
SQS HealthCheck

2. Customer needs and market situation

Our customers need a pragmatic solution for testing to answer business pressures.

Business Pressures 2009

- “You need to reduce testing costs”
- “You need to improve quality to retain customers”
- “You need to test more with no additional resource”
- “We are not interested in maturity levels”
- “Any investment needs immediate ROI”



Client

- How can I reduce the cost of my test effort to save money?
- How can I improve my test effort to deliver better quality ?
- How can I increase the scope of my testing without increasing the costs ?
- How can I find improvement ideas without a large formal assessment ?



Measurement of current test processes

Pragmatic solutions to help improve test efficiency and effectiveness

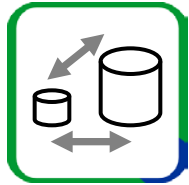
Immediate provision of assets to support improved testing



SQS
HealthCheck

3. Description of the offering

Clients benefit from the large range of assessments which can easily be combined.



Scalable:
Can be run for a phase or an entire programme



Repeatable:
Can be run repeatedly to show improvement



Immediate:
Delivers real immediate benefit from SQS kitbag



Pragmatic:
Can be directed at specific areas of concern



Collaborative:
Is helping the client help themselves



Independent:
An external view on your processes, risks and opportunities

Range: Wide and shallow – covering a lot of QA and test activities in a fair amount of detail

Consistent: All SQS Assessments are based upon the same approach of process analysis – so this can easily link into other assessments or process improvement initiatives.











Inbuilt: Can be built into existing or new projects as a regular activity, removing the need for additional cost

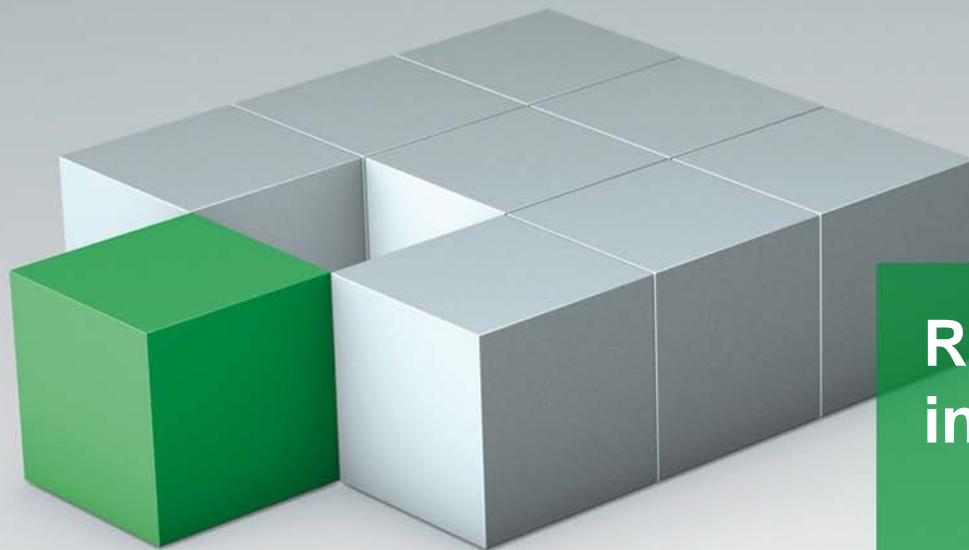


Based upon:
25 years
of International Assessment Experience

4. Benefits for the customer

Our improvement suggestions lead to a great increase in efficiency.

Cost		Benefit	
	=		Independent assessment of QA processes
	x2		Confidence in QA processes
	x2		Immediate improvements (templates, assets etc)
	x4		Process improvement suggestions
	x10 ↑		Improvements in efficiency and effectiveness resulting from improvement suggestions. Projects delivered on time.



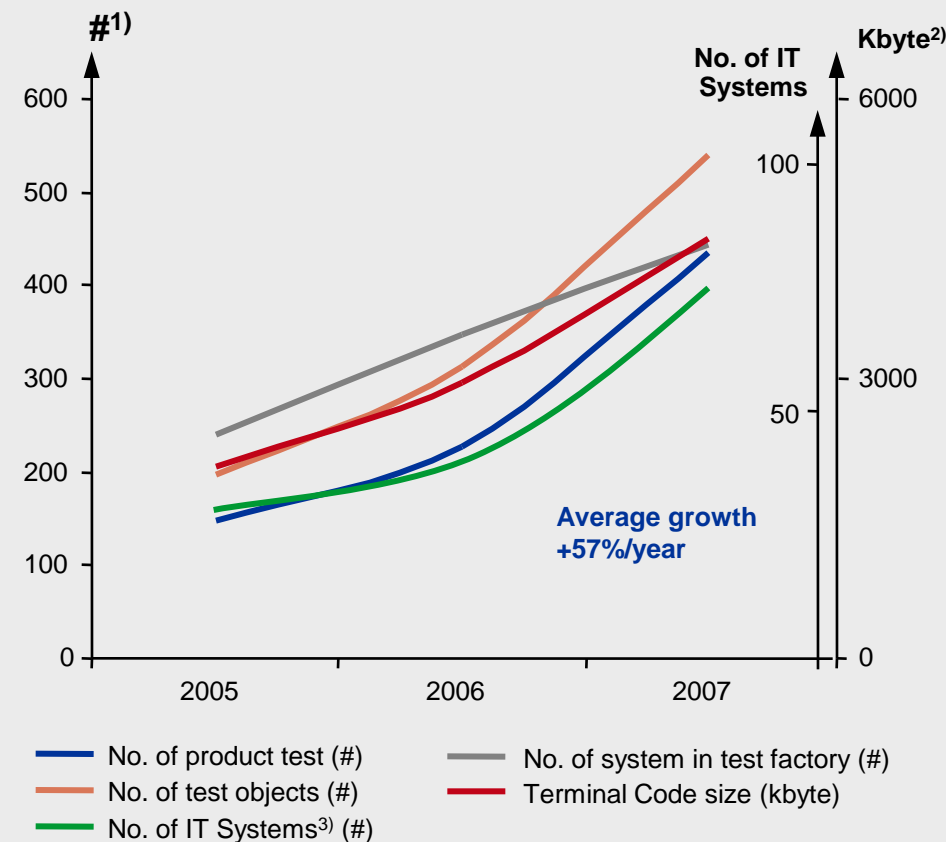
Regression Testing in Maintenance

2. Customer needs and market situation (2/2)

Testing functions successfully coped with growing complexity, but complexity increase in products and platforms likely to continue.



Growing Complexity of Systems and Services



Complexity of products and platforms has grown exponentially over past years and is likely to continue to grow

- No. of products + 71%/year
- No. of test objects + 66%/year
- No. system in test factory + 36%/year
- Terminal code size + 48%/year
- No. of IT Systems + 63%/year³⁾

Testing functions have coped with growing complexity of products and platforms by

- Resource growth in testing functions 5%-10% below growth of complexity
- Cost reduction, automation and focus

Future increase in complexity for products and platforms is not directly in control of testing functions and will therefore continue to drive resources if no actions are taken

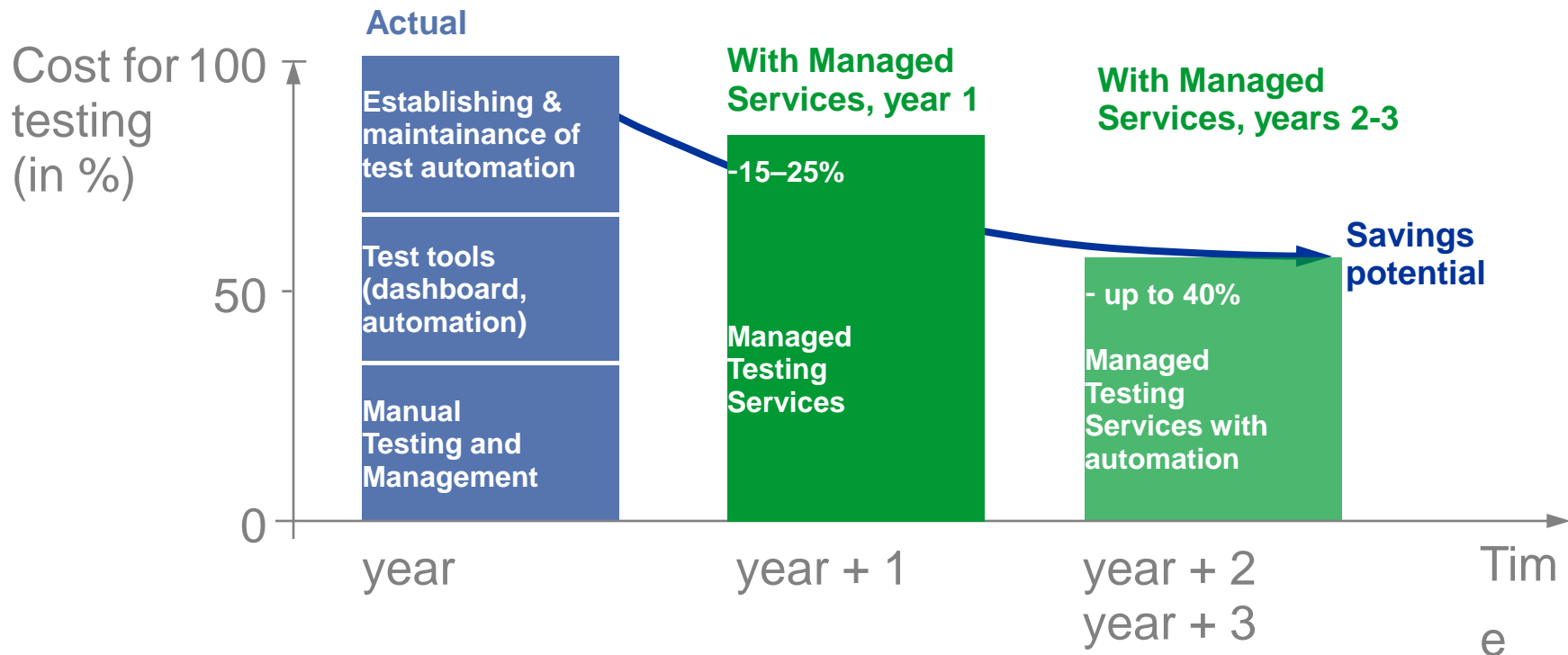
1) Number of product test, test objects, system in factory

2) Code size of software in terminals

3) No if IT systems, '05-07' growth 63%, other data not available

4. Benefits for the customer (RoI) (2/2)

Managed services and automation offer potential for cost optimisation.



The re-integration of the testware in the responsibility and IT of the customer is feasible at any time.

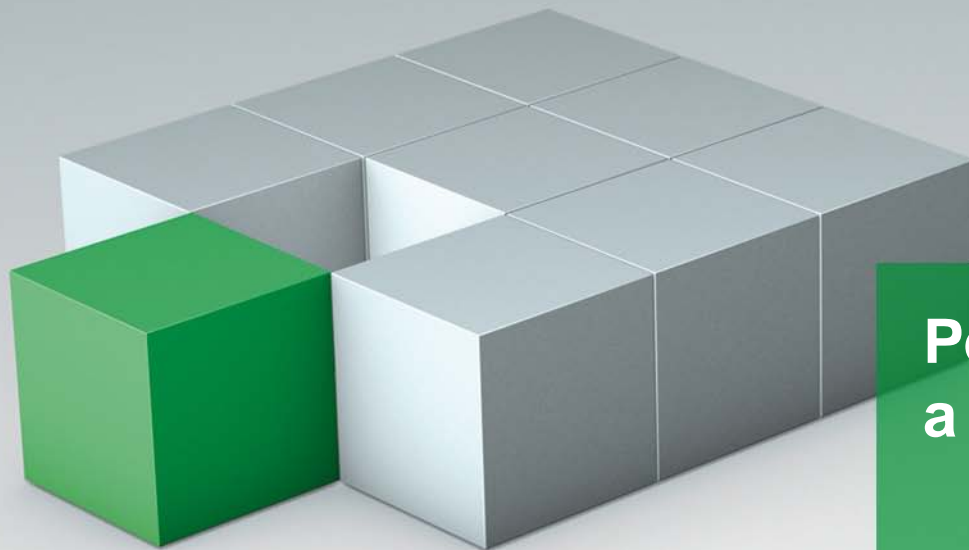
7. Competitors

Regression testing is dominated by global companies with Test Centers in low-wage countries



Regression Testing in Europe for Financial Services Institutions clients

Sopra Group (Axway)	>40 clients	
LogicaCMG	33	
AppLabs	22 in UK	
WIPRO Technologies	8	regression testing
	8	automation testing
Polaris	10	regression automation
Tata Consultancy Services	9	
Hexaware	5	test automation
KPIT Cummins	3	manual regression testing
	1	automation testing
Allied Testing	3	
i-flex	3	regression automation
Infosys	2	
Thinksoft	2	automated regression test packs



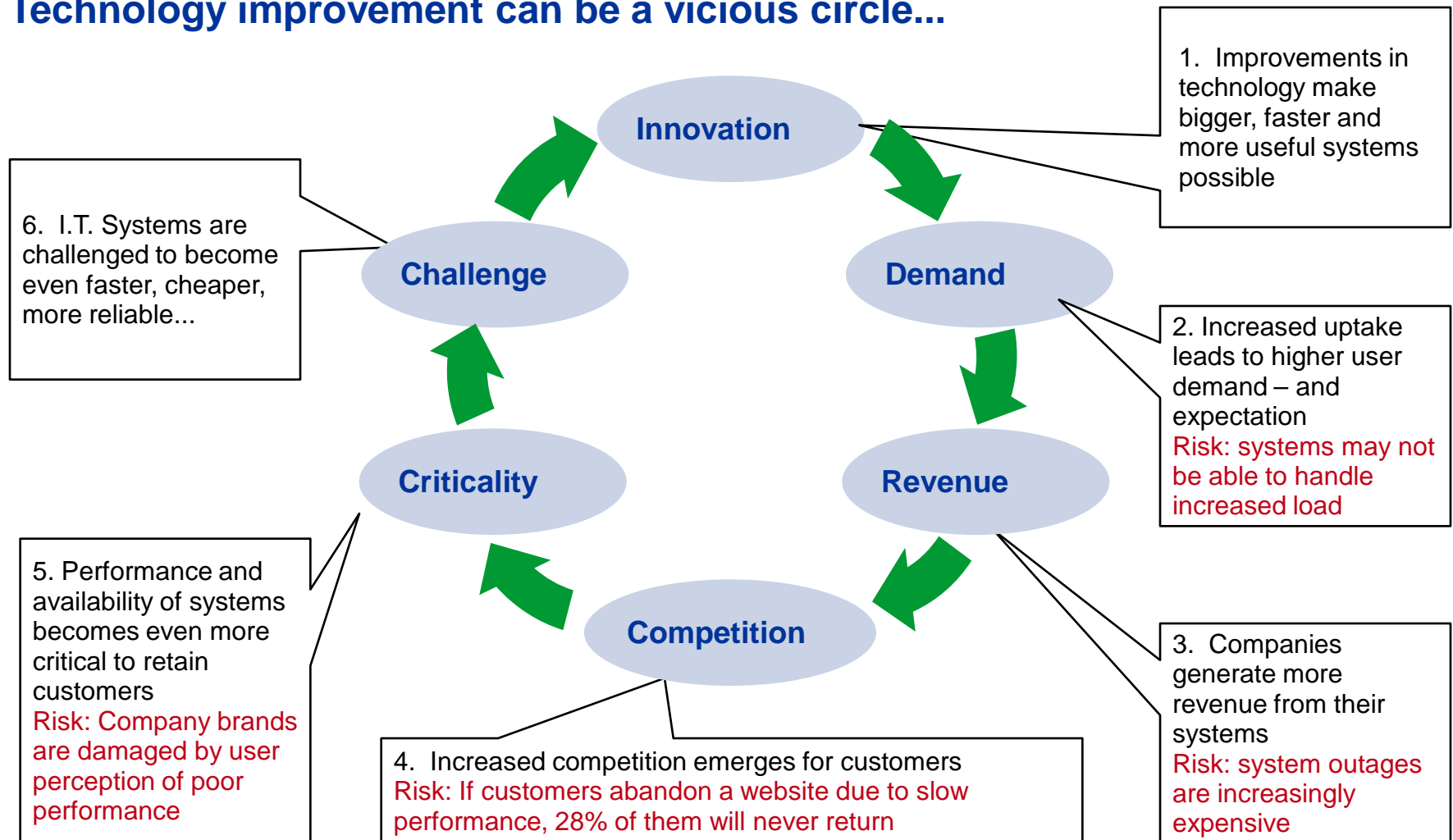
Performance testing as a managed service

Customer needs and market situation

The increasing importance of system performance



Technology improvement can be a vicious circle...



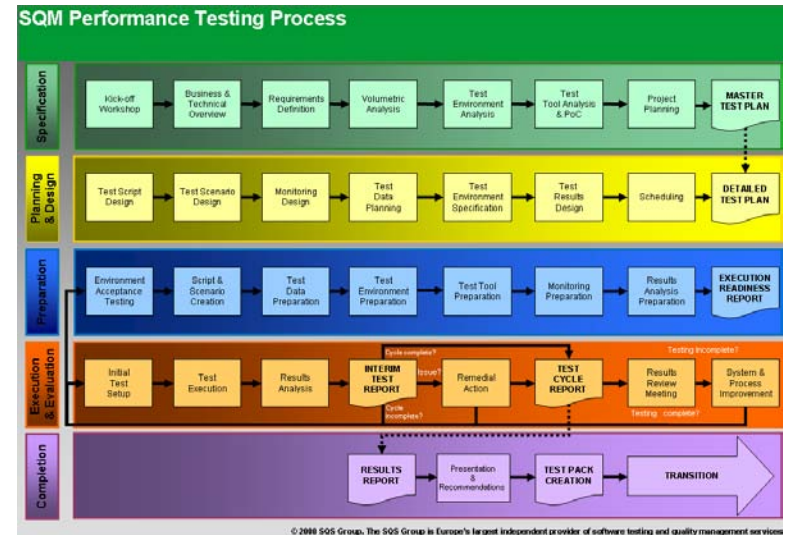
Description of the offering

SQS has a vast array of capabilities in this area



Performance Test Managed Service Capabilities

- SQS is able to:
 - Supply skilled resources with proven performance testing delivery success
 - Utilise our offshore centres in India, South Africa and Egypt
 - Flex resource levels quickly on demand
 - Use our unique methodology and unparalleled industry experience



	South Africa	Egypt	India
Language			
Customer situation	International customers	National customers (Germany, Austria, Switzerland)	International customers, US customers

Benefits for the customer (RoI)

The project outcome for a large UK private health insurer clearly shows the benefits from our approach



Existing Client – 3 Performance testers

Role	Onshore	Offshore	Daily Rate	Cost to Client
Onshore Performance Tester	3	-	€525	€1,575

New Business Demand = 9+ Performance testers

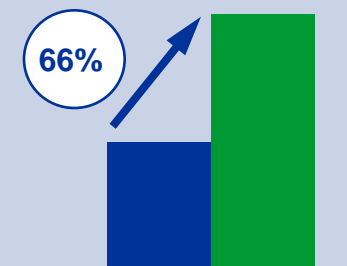
SQS Onshore option

Role	Onshore	Offshore	Daily Rate	Cost to Client
Onshore Performance Tester	9	-	€500	€4,500
Total Cost to Client				€4,500

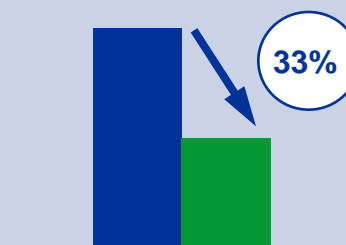
SQS Managed Onshore/Offshore service option

Role	Onshore	Offshore	Daily Rate	Cost to Client
SQS Onshore Test Lead	1	-	€400	€400
Onshore Performance Tester	3	-	€500	€1,500
Offshore Performance Tester	7	€150		€1,050
Total Cost to Client				€2,950

Client services



Client Costs



Increased client services at less cost

Benefits for the customer (RoI) Another successful example for the possible benefits comes from a large food & beverage manufacturer



SQS Client – Ongoing performance testing

- Office in each major country in Europe
- Stock control application – UNIX green screen and thick client
- New hardware purchases – want to minimise spending

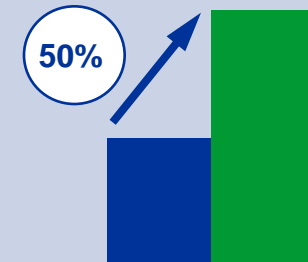
SQS Service Model

- SQS team test releases on demand
- Service is model across projects within company IT division
- Ability to define capacity hardware requirements

SQS Service Delivery Success

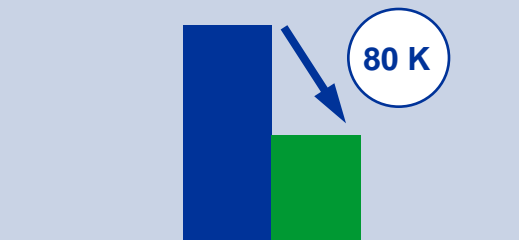
- Project rolled out on time/ budget – successful go-live
- Increased application performance by 50%
- Reduced project hardware spent by £80,000

Application Performance



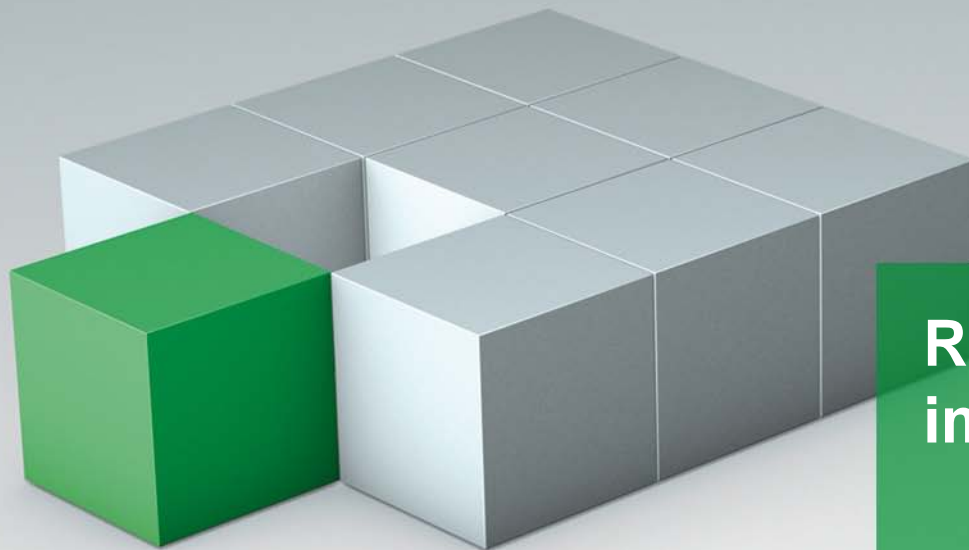
Increased application performance by 50%

Client Costs



Reduced project H/W cost by £80,000

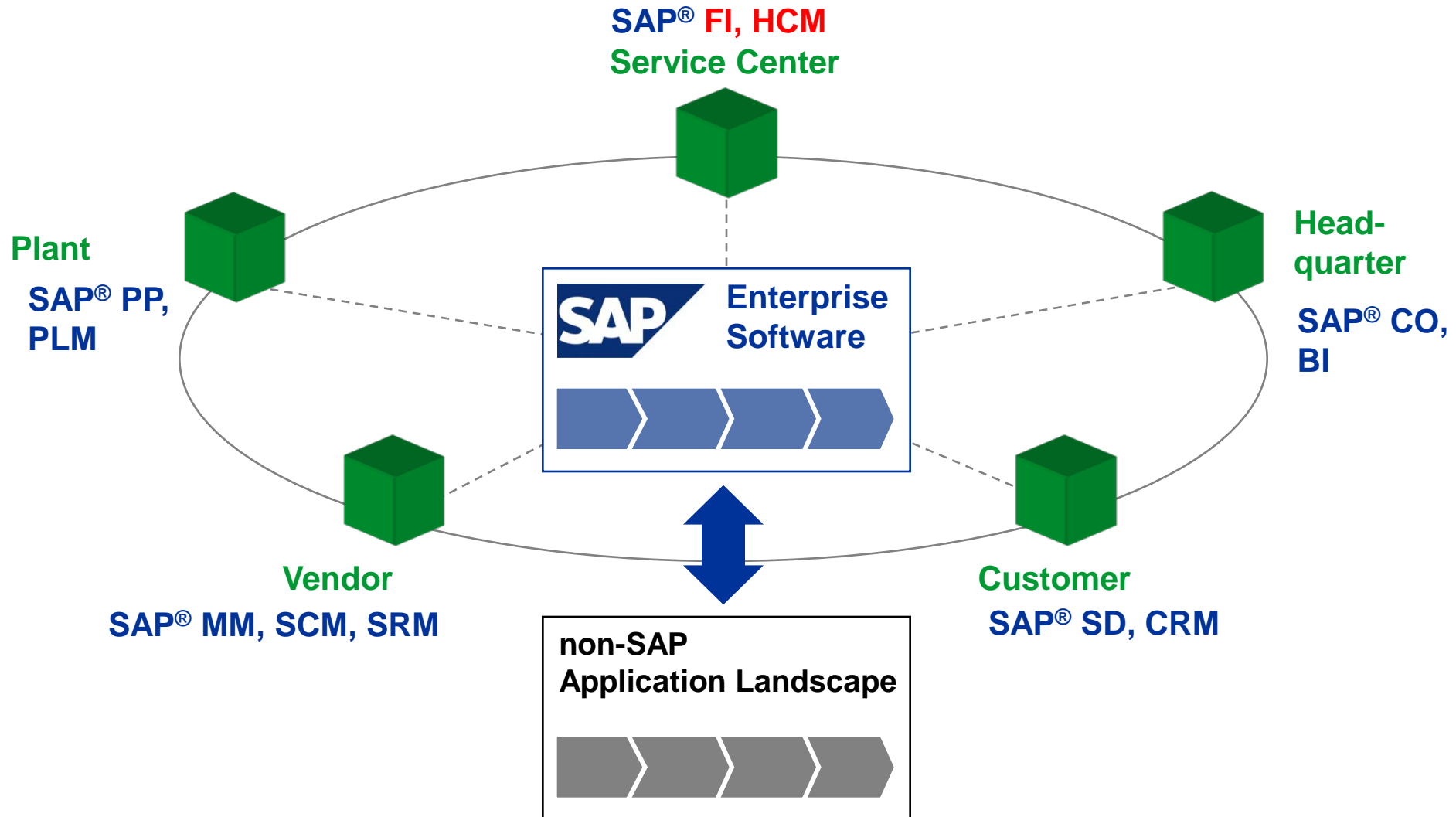
Increased application performance at less cost



Rapid testing for SAP implementations

2. Customer needs and market situation (1/5)

Due to high complexity and criticality of SAP scenarios testing is associated with significant cost and effort

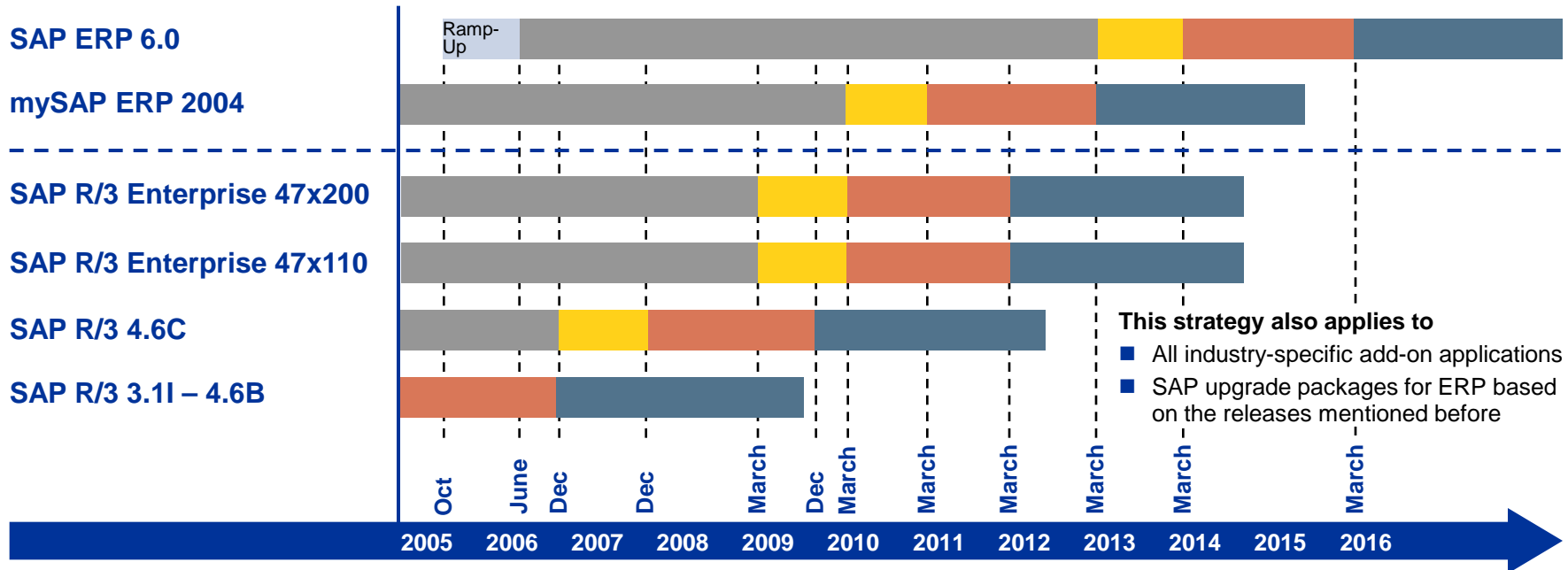


SAP Release Strategy

important



Update Window for the market requirements



This strategy also applies to

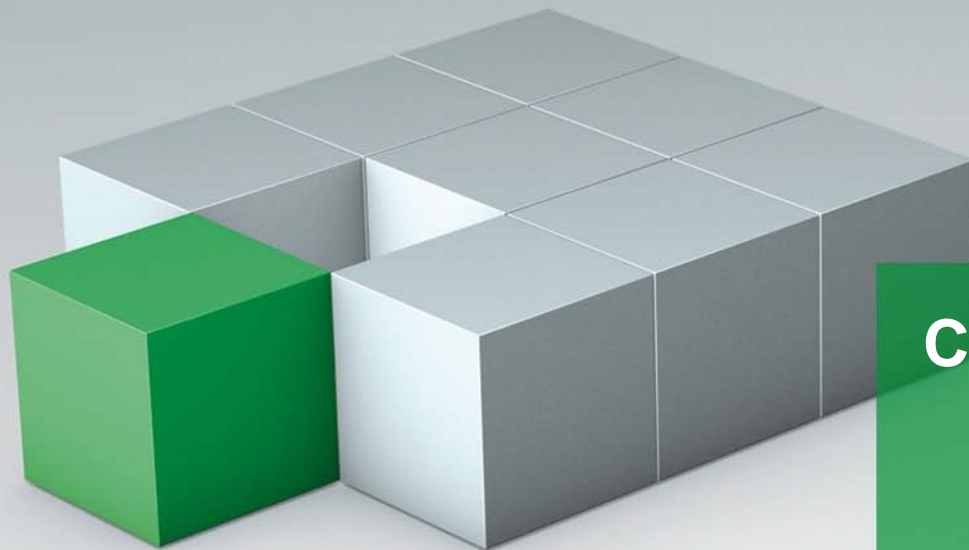
- All industry-specific add-on applications
- SAP upgrade packages for ERP based on the releases mentioned before

- SAP customers are under pressure to upgrade due to higher maintenance cost for older versions
- Besides maintenance cost, enhanced business flexibility is another reason for companies to upgrade

- Mainstream maintenance
- Enlarged maintenance (+2%)*
- Enlarged maintenance (+4%)*
- Client-specific maintenance

* Total cost includes SAP standard support/SAP premium support fees incl. additional fees (2% resp. 4% of maintenance base cost per year).

Quality Services and
Testing Solutions at Work



Commercial Innovation

SQS Software Quality Systems AG

Commercial Innovation



Test Points – Pay per test executed

Defect Points – Pay per Defect discovered

Improvement based pricing – Pay in relation to performance improvements

Risk Reward – shared risk / shared reward

Reduced fee automation solutions

We all need to think about innovative solutions...

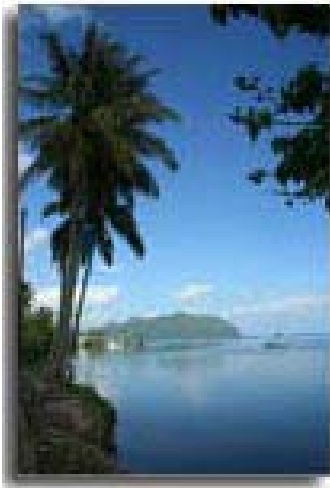


Testing is uniquely placed to meet both the traditional challenges faced by the market and those thrust upon us more recently...

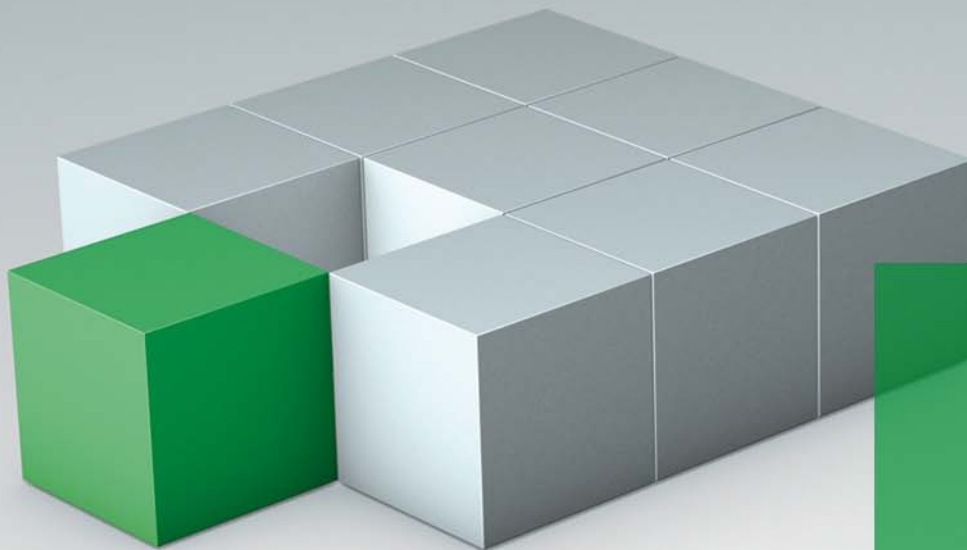
How can you shape your services to make them an easy decision for the business ?

How can you show that an investment in testing is seldom an investment wasted ?

How can you prove and publicise your improvements in test efficiency and effectiveness to better support your case ?



***See you in
Hawaii !!***



Ivan Ericsson

Director of Methodology

SQS-UK

Thank you for your attention!