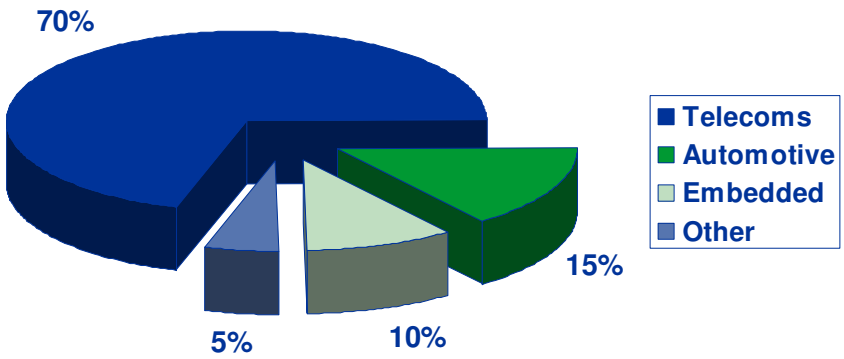
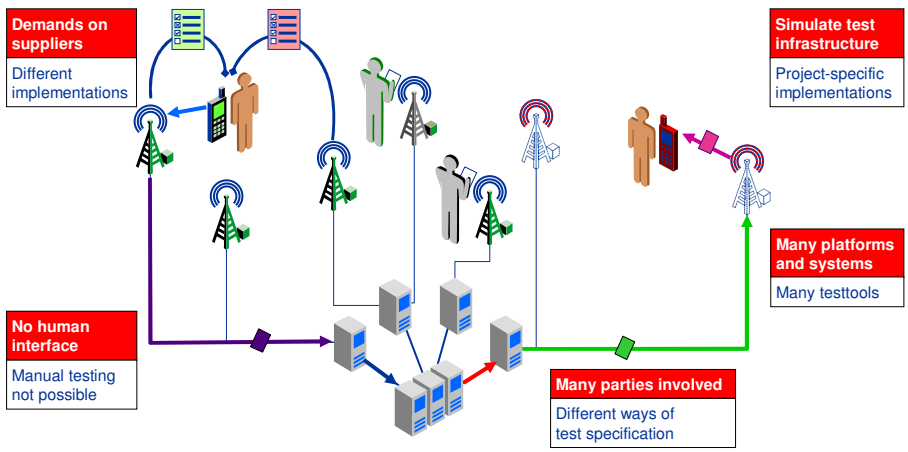
bartosz
SQS
SOFTWARE QUALITY SYSTEMS
Things to consider before applying TTCN-3
There are two sides to the coin
ir. Erik Altena
Eindhoven, November 4th, 2009
SQS Nederland B.V. / Bartosz ICT B.V.

bartosz
ETSI
SQS
SOFTWARE QUALITY SYSTEMS
TTCN-3
Testing & Test Control Notation
2009
1984
© SQS Nederland B.V. / Bartosz ICT B.V. | Things to consider before applying TTCN-3 | November 4th, 2009 | Page 2

Distribution of TTCN-3 usage per domain





bartosz

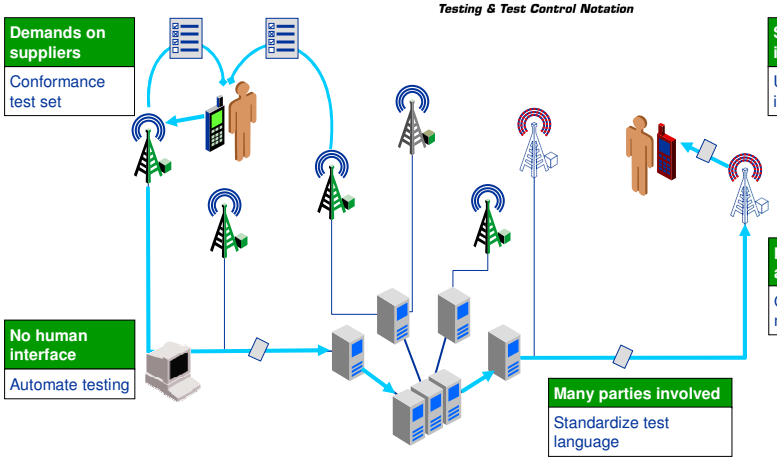
SQS SOFTWARE QUALITY SYSTEMS

TTCN-3

Testing & Test Control Notation

Demands on suppliers
Conformance test set

Simulate test infrastructure
Uniform implementation



Many platforms and systems
One testtool with many plug-ins

No human interface
Automate testing

Many parties involved
Standardize test language

bartosz

SQS SOFTWARE QUALITY SYSTEMS

contains most desired test features

supports synchronous & asynchronous communication

mapping to other standards - XML, ASN.1, IDL

used in model based testing

TTCN-3

Testing & Test Control Notation

multiple presentation formats – text, graphical and TestFrame

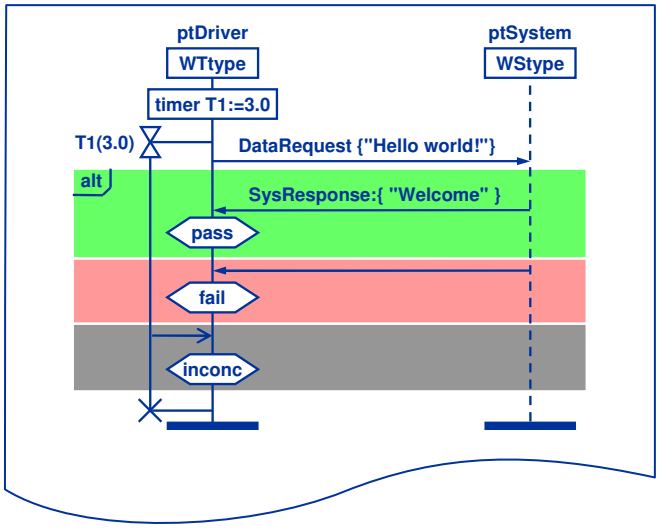
tool vendor independent

flexible test architecture

applicable on diverse operating systems

bartosz

SQS SOFTWARE QUALITY SYSTEMS



```
testcase FirstComm() runs on MTC {
    map (mtc:ptDriver, system:ptSystem);
    timer t1 := 3.0;
    t1.start;

    ptDriver.send ( DataRequest:{"Hello world!"} );

    alt {
        [ ] ptDriver.receive ( SysResponse:{ "Welcome" } );  {
            setverdict ( pass ); }
        [ ] ptDriver.receive {
            setverdict ( fail ); }
        [ ] t1.timeout {
            setverdict ( inconc ); }
    }
    t1.stop

    unmap (mtc:DriverPort, system:SystemPort);
}
```


One specification language | **Execution tool** | **Multiple adapters**

```
testcase FirstComm() runs on MTC {
    map (mtc:ptDriver, system:ptSystem);
    timer t1 := 3.0;
    t1.start;

    ptDriver.send ( DataRequest:{"Hello world!"} );

    alt {
        [ ] ptDriver.receive ( SysResponse:{ "Welcome" } );  {
            setverdict ( pass ); }
        [ ] ptDriver.receive {
            setverdict ( fail ); }
        [ ] t1.timeout {
            setverdict ( inconc ); }
    }
    t1.stop

    unmap (mtc:DriverPort, system:SystemPort);
}
```

TTCN-3 Testing & Test Control Notation

- GSM
- 3GPP
- IPv6
- AUTOSAR

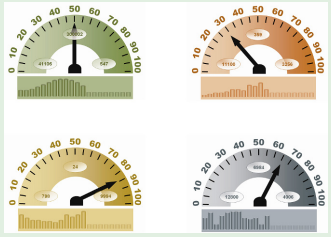
Translation

- Unix
- Linux
- Windows

bartosz

SQS SOFTWARE QUALITY SYSTEMS

One specification language | Execution tool | Multiple adapters

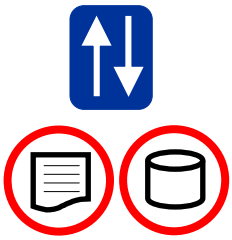


bartosz

SQS SOFTWARE QUALITY SYSTEMS

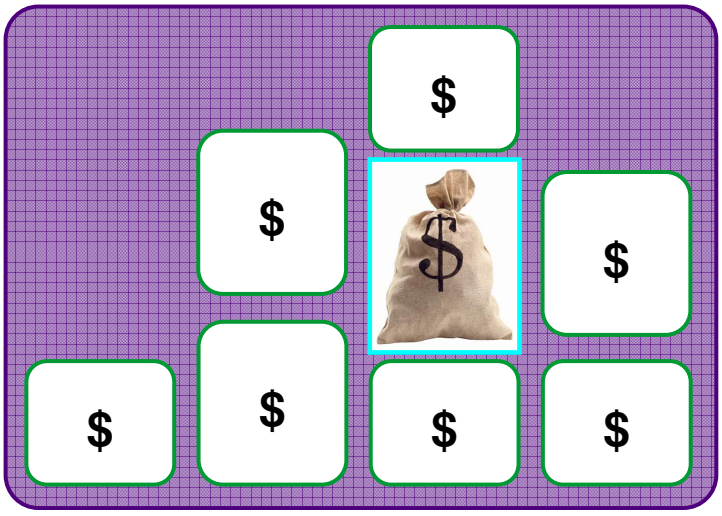
Things to improve to widen TTCN-3 usage

easier to use



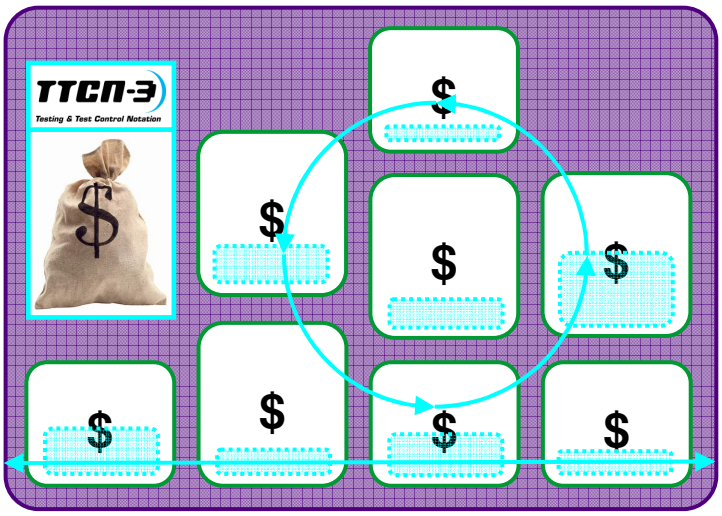
support for files & databases

easier adapter development



Costs:
- Test tool
- Scripting
- Training
- Adapter(s)

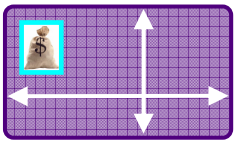
Benefits:
- Faster
- Re-usable



Costs:
- Reduction Total Cost of Ownership of test tools

Benefits:
- Single Point of Contact
- Testing business processes

Things to consider *before* applying TTCN-3

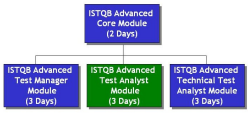


organization and project size

testing interfaces and protocols

number of adapters needed

number of current test tool vendors



structured testing process