

Performance Testing Council



**Investing in
The Future of Testing**

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Performance Testing Council

**Investing in the Future
Part I**



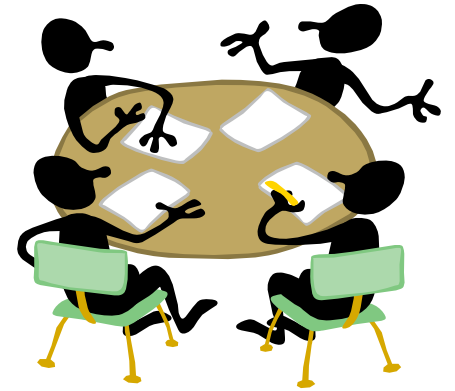
Testing Today

- Traditional testing market maturing
 - Particularly in IT
- Changing perception of certification
- Demand for assessments of real skills
- Focus on hands-on competencies rather than knowledge: doing vs. knowing
- Emphasis on performance management, productivity, competitiveness, proof of competence

The Need

- To create better certification tests & assessment
 - IT certification tests have been criticized as inadequate at measuring real world skills
 - IT certifications based on current test standards have been criticized as certifying individuals who are not as competent as they need to be
 - Disconnect between passing the test and observed performance capability
 - Certification testing isn't producing the desired outcome: a proof of competency
- These criticisms can't be easily dismissed

What is PTC?



An organization that:

- Provides a forum for study of Performance Testing (PT)
- Conducts Research & Development into PT
- Establishes new standards, best practices, guidelines
- Promotes innovation of new PT products and services
- Advocates PT to industries & organizations that can benefit

PTC Goals

- Create a community of industry professionals working toward shared goals
- Identify key performance testing issues
 - Validity, reliability, cut score, delivery, security, etc.
 - Standards needed
- Prioritize and carry out R&D projects
- Communicate effectively
- Improve training/education
- Improve value and opportunity for all stakeholders

Founding Members

TEST VENDORS, PUBLISHERS, CONSULTANTS

Alpine Media

ASPTrain

Caveon

Certiport Inc.

Cisco Systems

Field Certified Professional Association

Galileo Systems

Hewlett-Packard

IBM / Lotus / Tivoli

J.D. Edwards / Peoplesoft

Linux Professional Institute

Microsoft

NCS Pearson

Novell

Oracle

Prometric

Promissor

Red Hat

Self Test Software

Sun Microsystems

Test Out

Veritas

VUE

David Foster

Formation of PTC

- Study group forms of scientists and leaders from IT test industry (Founding Members)
- 5 PTC summit meetings, March 2002 – Sept 2003
- June, 2003: Founding Members vote to adopt name; elect Board
- 5th Summit: Sept 2003: unanimous ratification of By-Laws by Founding Members
- Oct. 2003: PTC incorporated as non-profit 501(c)(3)
 - Scientific organization category
 - Standards organization (like IEEE, ATP, etc.)

PTC Stakeholders

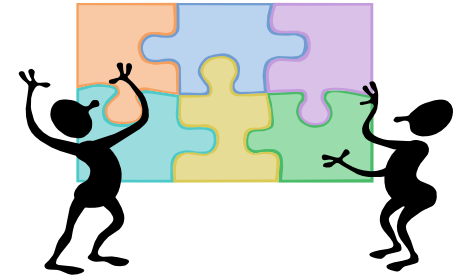
- IT certification programs and test providers
- Test consultants
- Certificants and candidates
- Corporate management
- Employers
- Government agencies
- Training organizations
- Academic organizations
- Other organizations (such as ATP, ITCSC, etc.)

Why do this?



- PTC members believe in Performance Testing
- Many already doing PT, seeing results
- PT requires additional science, methods, psychometrics, standards, shared practices
- Use and adoption of PT is one of the most promising areas of new value creation in the testing industry, for IT and for non-IT
- No one else is doing this. We're it!
- Potential for leadership and impact is huge

PTC Activities



● Current:

- Meetings (3 per yr)
- Practice Area Committees
- Psychometrics for PT
 - Reliability
 - Cut score
 - Validity
 - Adaptive PT
- Case Studies: Novell CDE
- Surveys, research, data analysis
- Already increasing the mindshare and value of PT

● Future:

- Proactive scientific research & development
- Deeper access and analysis of PT data
- Develop and define new standards
- Increased activity and impact
- Broad representation and communications
- Universities, foundations
- Publications

Benefits of PTC

- Benefits of funding R&D at PTC include:
 - Your own R&D and products using PT can be consistent with independent standards
 - R&D is leveraged, carried out collaboratively at PTC
 - Patent research, protection: defining current state of the art and collectively sharing knowledge about prior art
 - Establishes scientific validity and reliability metrics, criteria, best practices, methods
 - Leverages independent 3rd party validation studies
 - Establishes defensibility just as for traditional tests
 - Employers better protected when making performance tests required of their employees

Business Opportunities

- New testing and certification products, at higher value levels
 - Provide a *guarantee* of competency
- New PT based performance assessment services:
 - PT can be used for more frequent testing and assessment
 - Some jobs require *continual* performance assessment
- Competitive advantages:
 - PT as a capstone certification makes your competency models, training tracks, and traditional tests more valuable
 - Better products, enhanced price/performance
 - Hard to duplicate successful branded PT offerings

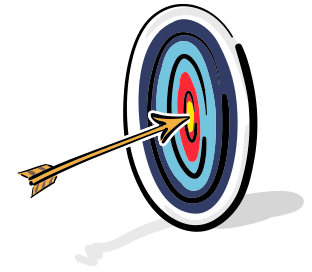
Performance Testing Examples

- **Rackspace Managed Hosting**

- Top of industry SLAs
- 99.999% uptime
- 24x7 Level 3 Support
- RHCEs manage Linux servers
- RHCEs provide Level 3 support
- Publicly announced strategy
- **ROI: quality and competitive advantage**

- **Kelly Services**

- Office personnel
- Staff certification
- Uses Performance Testing to guarantee product
- Actual performance required of applicant
- **ROI: Greater client satisfaction => greater loyalty => repeat business**



Impact and Benefits

Test vendors:

- Develop the methods and standards needed for PT
- Learn from one another's mistakes and successes
- Create common frameworks and shared best practices
- Increase scalability and credibility of offerings
- Decrease development costs while adding value
- **Expand market, new products, revenue opportunities**

Companies:

- Learn how performance testing can add value
- New methods and standards for performance testing
- Rapid application development for performance tests
- Better training, testing, proof of competency
- Business solutions for industrial & service companies
- **ROI from better performance management, quality metrics**

How to Join

- Obtain and read PTC Bylaws
- Read Application and NDA
- Sign NDA and Application
- Include dues payment
- Send to PTC
- Upon acceptance:
 - Your Authorised Representative will be given access to PTC site
 - Questions: call (530) 272-5900

Performance Testing Council

Performance Testing:
New Testing Science,
New Value
Part II

Problems in IT testing

- Divorce between skills required to pass the certification tests and skills required on the job
- Teach-to-the-test; exam-cram; test strategies
- Security has become a big issue
- Not addressing needs of customers
- Customer's investments in certification now under scrutiny
- Development costs vs. falling prices paid for testing
 - Ubiquity of test delivery outpaced by its commodization
 - High quality cognitive tests cost more
- IT vendors cutting traditional psychometric investments
- Need new products and higher value products

Performance Testing Advantages

- Fidelity between skills to pass test and skills required on the job
 - Response modalities of the test match those of the competency in its target context
 - Better guarantee of competency in the target context
- Cheating is harder; exam cram doesn't work
- Fewer test items required; potential for adaptive PT
- Lower cost of exam item development, maintenance, update
- Higher cost of delivery, somewhat lower ubiquity
- Higher value = higher price = better profitability
- Resists commoditization, becomes a destination offering
- Customer satisfaction, strong perception of value

Examples of Performance Tests

- Driver's license road test
- Airline pilots, military pilots
 - Tests in realistic simulators
 - Every takeoff and landing is measured
- Apprentice exams for plumbers, electricians, auto mechanics (GM Mr. Goodwrench)
- IT job roles: Network Engr (CCIE, JNCIE, LCTE); Sys Admin (CDE, FCSE, CSE, RHCE); Desktop (MOUS, ECDL); and others...
- Optometric Board of Examiners
- Emergency Medical Responders
- Quality control & performance measurement

Need for Standards

- Performance Tests require further science to develop useful, applicable standards
 - Vendors of Performance Tests have had to invent their own methodologies and best practices
 - Top ranked IT performance tests can't utilize classical psychometric models as traditionally applied
- Need to adapt traditional psychometric standards to develop the science for performance tests
- New test modes require new standards
- Performance test vendors are interested in seeing standards developed

FAQs on PT

- **“Does growth of performance testing (PT) mean traditional tests will go away?”**
 - No. Performance testing is a new layer of value, supplementing traditional cognitive tests
 - Multiple choice has its place and is not going away
- **“Will PT cannibalize market for cognitive tests?”**
 - No. It will create a new market; PT helps to differentiate, maintain competitive offerings
 - The two go together: multiple choice tests can be a prerequisite to Performance Tests
 - Traditional testing faces risks largely of its own making

FAQs on PT

- **“If I offer a Performance Test will it lower the perceived value of my traditional tests?”**
 - No. Traditional tests can be positioned to track to and pre-qualify for performance tests. People will take both.
- **“Why should I care about standards for PT?”**
 - Same reason as for traditional tests: your customers deserve an independent measure of validity
 - Standards are coming and you want to participate in their development, even if you don't have PT plans right now

FAQs on PT

- **“Why should I invest in PTC?”**
 - PTC is where the standards will be developed, and the work of PTC leverages your own R&D investments
- **“We would join but we aren't sure how to apply classical test theory to PT”**
 - Yes, exactly the reason to get involved in PTC!
 - That's what PTC investigates. Some vendors have successfully applied psychometrics to PT with good results
 - Classical test theory needs to be adapted to performance testing: this is what PTC will be focused on
 - Learn more by joining and actively participating

FAQs on PTC

- **“We have already decided we can't do PT. No plans for PT. Why should we join PTC?”**
 - Evaluate PT on a much bigger scale, give it a fresh look, supported by experts and practitioners
 - PT is growing, as success of many PTC members demonstrates
 - Learn about successful PTs in a range of contexts
 - Invest in the future: opportunities you have not thought of yet (Never say never. Never say can't.)
 - Do you want your company to be away from the table when standards for PT are developed?

FAQs on PT

- **“We believe performance testing provides a better performance measure, but can it scale?”**
 - Yes it can. Test delivery is a major area of PTC innovation, for standards and solutions
 - PT has advantages even if not as ubiquitous as traditional testing
- **“Can PT be brought to market at competitive pricing?”**
 - Yes it can. Major IT vendors have pushed the price of PT down to equal or less than cost of traditional tests
 - PTC members share info on how they do it

FAQs on PTC

- **“Why doesn’t ATP (Association of Test Publishers) address performance testing?”**
 - ATP is focused on lobbying more than R&D
 - ATP charter limits members to publishers of psychometrically valid tests
 - New validation methodologies are required for PT
 - ATP is focused on traditional (multiple-choice) test measures, not looking for new testing methods
 - Different skills are required to develop Performance Tests than conventional multiple choice tests
 - “Innovator's Dilemma” issues apply

FAQs on PTC

- **“Why would I share data and methods with other Regular Members at PTC?”**
 - Only by sharing data and methods can standards be developed
 - Your data and methods kept to yourself don't help you create or provide an independent measure of validity
- **“What are protections for confidential info & IP?”**
 - Sharing of data or material is strictly voluntary
 - PTC Bylaws bind Members to non-disclosure between one another and PTC
 - Ownership of a Member's IP remains with that Member unless otherwise assigned in writing by that Member.

FAQs on PTC

- **“How do I insure that the standards developed at PTC will be appropriate and useful by my industry and company?”**
 - Join PTC and get involved!
 - Participate in Practice Area Committees on issues related to your industry and company
 - PTC focus is on valid science
 - Proposed standards are balloted to entire voting membership, and there is an appeal process
 - PTC processes are modelled on successful standards development orgs (IEEE, ANSI, ISO)