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## Psychometrics for a Global Business World

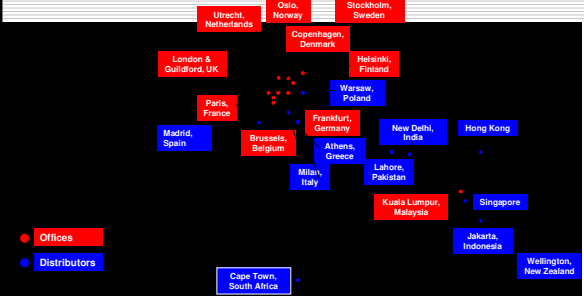
ABP Conference, Wyboston, 10<sup>th</sup> May 2008



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## Offices and Distributors

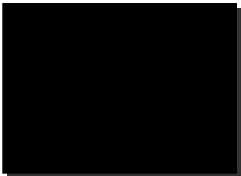


● Offices  
● Distributors

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## Agenda

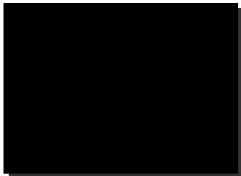
- Fast global growth of psychometric testing
- Factors driving the growth
- Changing face of testing
- Challenges
- Opportunities
- Case example
- Your experience
- Future directions



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- Fast global growth of psychometric testing
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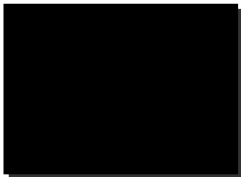
## Global usage of psychometrics is growing

- No accurate industry statistics
- Anecdotally, some of the established psychometric tests publishers report very fast growth test administrations
- Online testing may have reached a "tipping point"
- SHL report that in the six years to 2007 provided over 1.6 million online ability tests around the world, but over half that number was in 2007

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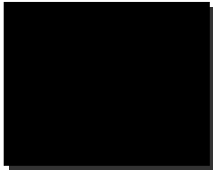
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## Factors driving the growth

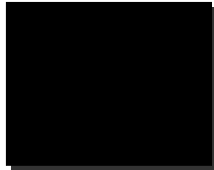
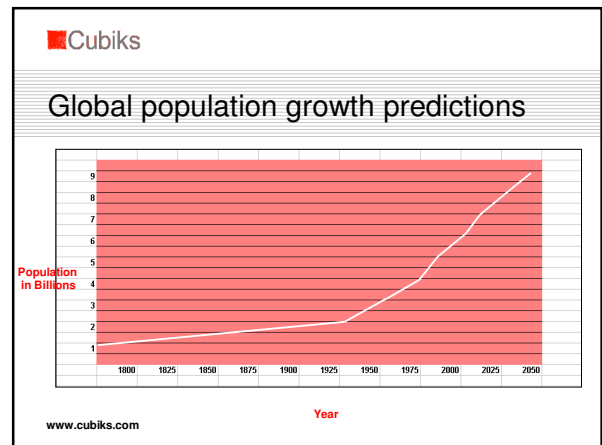
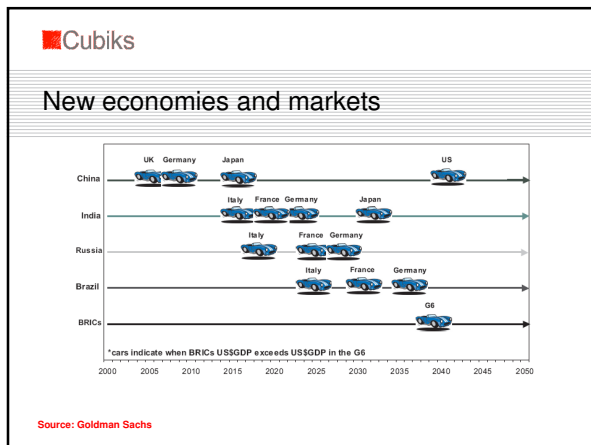
- Socioeconomic drivers
- Technology
- Test publisher response



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## Factors driving the growth

- Socioeconomic drivers
- Technology
- Test publisher response

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## Workforce impact

- 1980: Global workforce approx 960 million
- 1980s/1990s: China, India and former Soviet bloc join global system of production and consumption.
- By 2000, those countries contributed 1.47 billion workers to the global labour pool
- By 2010, China alone will graduate more PhDs in science and engineering than the United States.

Source: Richard Freeman writing in The Globalist

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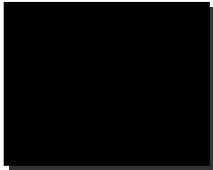
## Other socioeconomic trends impacting testing

Factor	Impact on testing
Deluge of applicants for entry level positions in developing economies	Need for quick screening methods
Global corporate consolidation - geographically dispersed workers.	Need for cost effective benchmark evaluations
Reduced barriers to worker mobility - e.g. EU, travel, communications	Wider applicant pool for evaluation

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## Factors driving the growth

- Socioeconomic drivers
- Technology**
- Test publisher response



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*"This is 'change the world' time. It is a global level playing field, and there is no fringe anymore. The new technologies are deeply democratic."*

**Hamish McRae**

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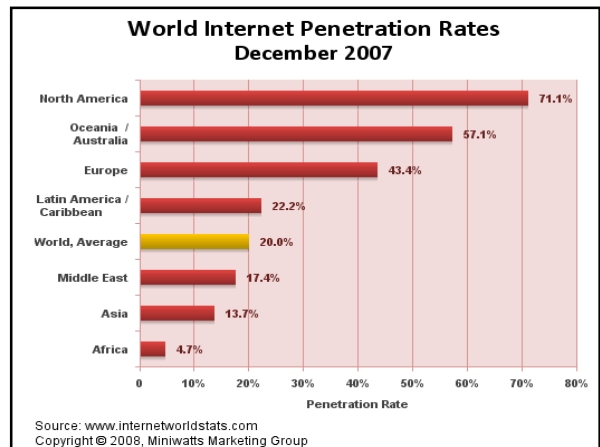
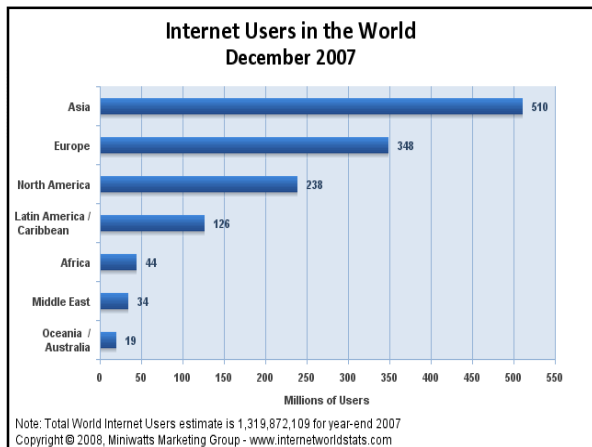
*"When I took office, only high energy physicists had ever heard of what is called the World Wide Web ... Now even my cat has it's own page."*

**Bill Clinton**

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## Technology enabling growth of testing


- Ease/practicality of internet delivered assessments:**
  - Tests ahead of interview
  - Volume testing where costs were previously prohibitive
  - Automated decisions about job applicants, with automated feedback
  - Instant scoring, reporting, job matching
  - Language flexibility
- Speed/ease of implementing bespoke/tailored assessments**
- Integration with applicant tracking systems & ERPs**

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## Factors driving the growth

- Socioeconomic drivers
- Technology
- **Test publisher response**



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## Test publisher response: increasing the supply of tests

- More high volume assessment offerings: (e.g. *SHL*, *Kenexa*, *TalentQ*)
- More bespoke/ niche offerings.
- Heavy investment in IT by several of the larger players.
- Development of technology specialists, supporting psychometric content developers (e.g. *Pantesting*)
- Proliferation of small testing companies.

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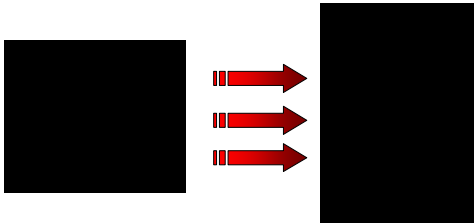
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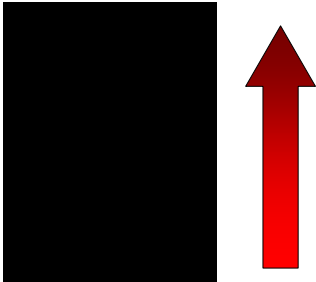
## Fluid human expertise crystallised via rules and algorithms



Psychometric outputs increasingly transparent/ accessible and less dependent on prior knowledge, training and qualifications

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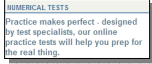
## More focus on volume, less on individual




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## Much more emphasis on self assessment

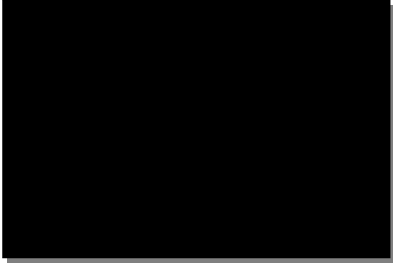
- **Practice testing**  
(e.g. recruitment sites)





- **Self assessment**  
(e.g. situational judgement/ realistic preview assessments for employers)

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## More dynamic/ simulated content




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## Challenges for psychometric testing


- Cultural issues
- Move away from traditional testing principles
- Verification of test taker identity
- Security and privacy issues
- Psychometric testing standards
- Web accessibility standards




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## Cultural issues


**Adaptation of tests:** More than translation and back translation:

Need for:

- Semantic as well as language equivalence
- Establishing construct/cultural relevance and validity
- Investigating test factor structure


**Attitudes to the testing process itself**

- E.g. 'honesty assumption' underlying use of online ability tests may not generalise

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## Move away from traditional testing principles

**Much less emphasis on:**

- Supervised/ controlled test taking environment
- Face-to-face feedback of psychometric results
- Interpretation by the trained/ qualified user

Need to make sure we don't throw the baby away with the bathwater

## Challenges for psychometric testing

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## Verification of test taker identity

- Verification (for timed performance tests) is sometimes seen as having a predominantly a technical/policing solution.
- Prof. Dave Bartram has summarised technical measures as:
  - Remote registration for authentication through thumb print or retinal eye pattern.
  - Remote monitoring through CCTV/webcam.
  - Item and test generation technologies to reduce the risk of compromising tests through item exposure.
  - Use of data forensics to detect response pattern aberrance
  - Web patrols and parameter checks to detect item compromise
- **But** can we really expect to outsmart those committed to cheating in remote environments?
- **And** will the endless exposure to online testing result ultimately in increased cynicism, and erosion of the 'honesty culture' where it exists?

## Challenges for psychometric testing

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- **Security and privacy issues**
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## Security and privacy issues

- Data protection requires close attention, for example:
  - Regulations differ across territories, even within the EU
  - Employees or candidates for one organisation typically encompass staff of multiple nationalities, working in multiple languages, in multiple locations
  - Data storage and processing may be under a different regime to the data controller and data subject.
  - In MRA/360, the rights of the observers and data subjects need to be balanced
- Web servers and applications are open to constant continual attack. Psychometric data, with accompanying identifiers and biographical data, can be described as 'sensitive'.
- Professional IT design, hosting and monitoring are critical.

## Challenges for psychometric testing

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## Psychometric testing standards

- **The standards and guidelines we have were originally conceived in a world of:**
  - Paper tests
  - Supervised administration
  - Manual scoring
  - Expert interpretation and report writing
- **The focus of standards will need to switch more onto designing and monitoring valid systems. E.g. for validation:**
  - Ensure valid decision algorithms for volume screening applications
  - For psychometric test reports, evaluate incremental validity over unaided expert user.

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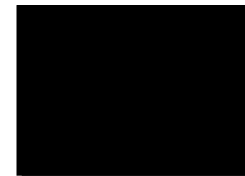


## Web accessibility standards

- Web accessibility – for candidates with disabilities is becoming a frequent requirement, particularly public sector:
  - **Web Content Accessibility guidelines (WC3)**
  - **Section 508 guidelines (US government)**
- Some commonly used IT psychometric development methodologies, e.g. Flash, are not compliant with the above.

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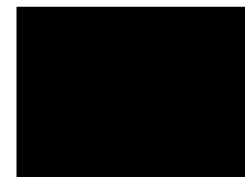


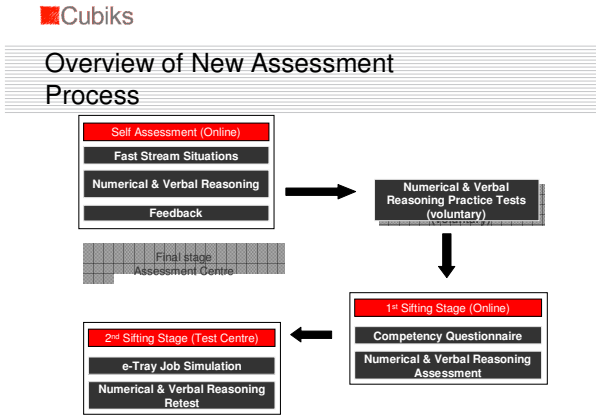
## Opportunities in global psychometric testing

- Opportunities exist to:**
- Do things well, on a mass and highly visible scale.
  - Partner with global businesses to establish firm wide metrics and monitor the effects of our interventions
  - Through the use of large databases, validate our tools and demonstrate real business benefit.
  - Leverage more on the technology available: online simulations, realistic previews, item banking and adaptive testing.

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