Making the Invisible Visible

Gaining Visibility into Software to Achieve Assurance

"standards and metrics"

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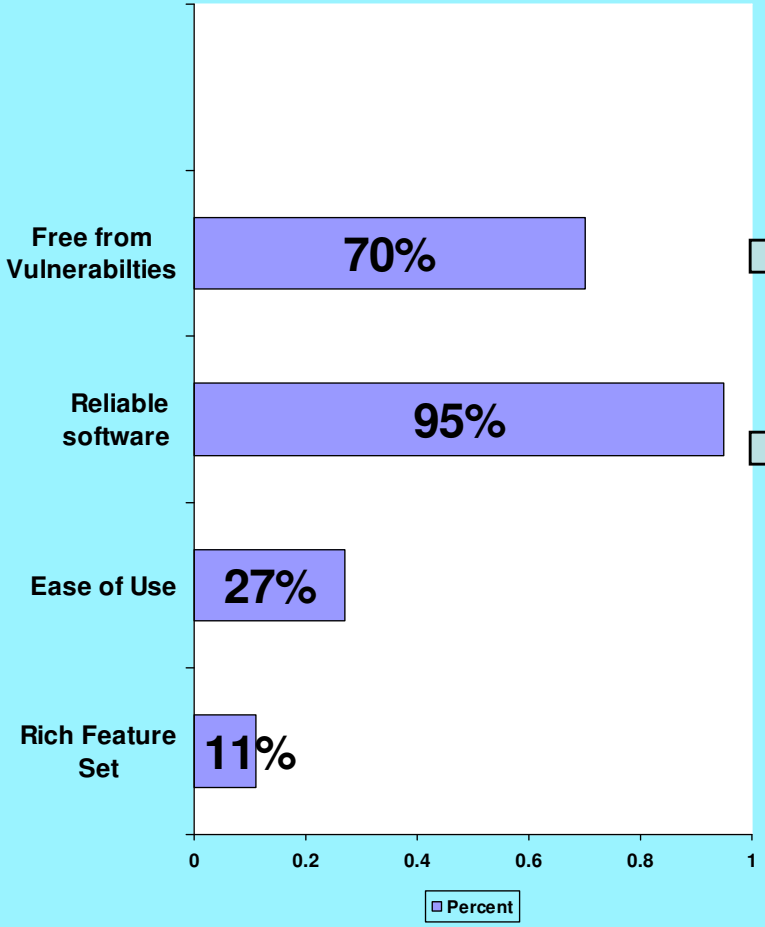
CIO Executive Council 2006 Survey Software Consumer Priorities



Software Assurance (SwA)

Trustworthiness - No exploitable vulnerabilities exist, either maliciously or unintentionally inserted;

Predictable Execution - Justifiable confidence that software, when executed, functions as intended;

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So Why are We Here

- Private sector values assured software but makes purchasing decisions based on features and functionality

- Why:
  - Visible attributes, easy to understand and directly related to operation/mission
  - Software assurance is abstract, intangible and hard to understand
  - Software features are relatable to the software consumer

End Result: Quality of implementation does not drive purchasing decisions

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What's Needed?
Standards & Metrics

- Standards provide a common lexicon to describing the invisible features of software assurance
- Metrics quantify the invisible attributes and makes them tangible

Enables informed purchasing decisions

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Software Assurance Standards & Metrics Must be …

- Relatable to the software consumer
- Proactively guided by the consumer to ensure that they are practical and relevant to their operations

Otherwise

- Will not be broadly adopted
- May be misinterpreted
- May lead to faulty assumptions about operational risk
- May lead to false sense of assurance
- May result in rejection of standards and metrics as a viable business tool

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Bringing together Software Consumers, Industry, Academics, and Government to Transform the Security and Dependability of Software

Improve the overall software assurance:

- Provide a voice to articulate consumer needs
- Encourage adoption of standards, methods, metrics, tools, and other means for mitigating risks by software providers
- Identify successful practices, methodologies, and techniques
- Share experiences in choosing, developing, and implementing good code
- Encourage development, sharing and publicizing “best practices”
- Leverage other orgs to develop and deliver standards and metrics
- Define, prioritize and sponsor a SWA research agenda on the hard problems
- Apply standard measures of quality to address worldwide supply chain risk management

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Why Software Assurance is Critical

- Software is the core constituent of modern products and services – it enables functionality and business operations
- Dramatic increase in mission risk due to increasing:
  - Software dependence and system interdependence (weakest link syndrome)
  - Software size & complexity (obscures intent and precludes exhaustive test)
  - Outsourcing and use of un-vetted software supply chain (COTS & custom)
  - Attack sophistication (easy exploitation)
  - Reuse (unintended consequences increases number of vulnerable targets)
  - Number of vulnerabilities & incidents with threats targeting software
  - Risk of asymmetric attack and threats
- Increasing awareness and concern

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SwAC Value for CIOs & Risk Managers:

- Be a voice for the consumer
- Strong voice to request special security features for small users
- Empower consumers to influence standards to improve SwA
- Provide a forum to share sensitive information
- Ability to report silently about what you don't want to say publicly
- Identify tools and testing labs: benchmark capabilities and features
- Provide special tools (propriety and sensitive) for the SwAC community
- Characterize the risk so you understand the potential impact
- Organizing formal and informal training for SwA
- Influence and improve SwA throughout the supply chain
- Satisfy Sarbanes Oxley for reasonable due diligence
- Develop a benchmark insurance, premium reduction considerations
- Software Facts Label (NIST)

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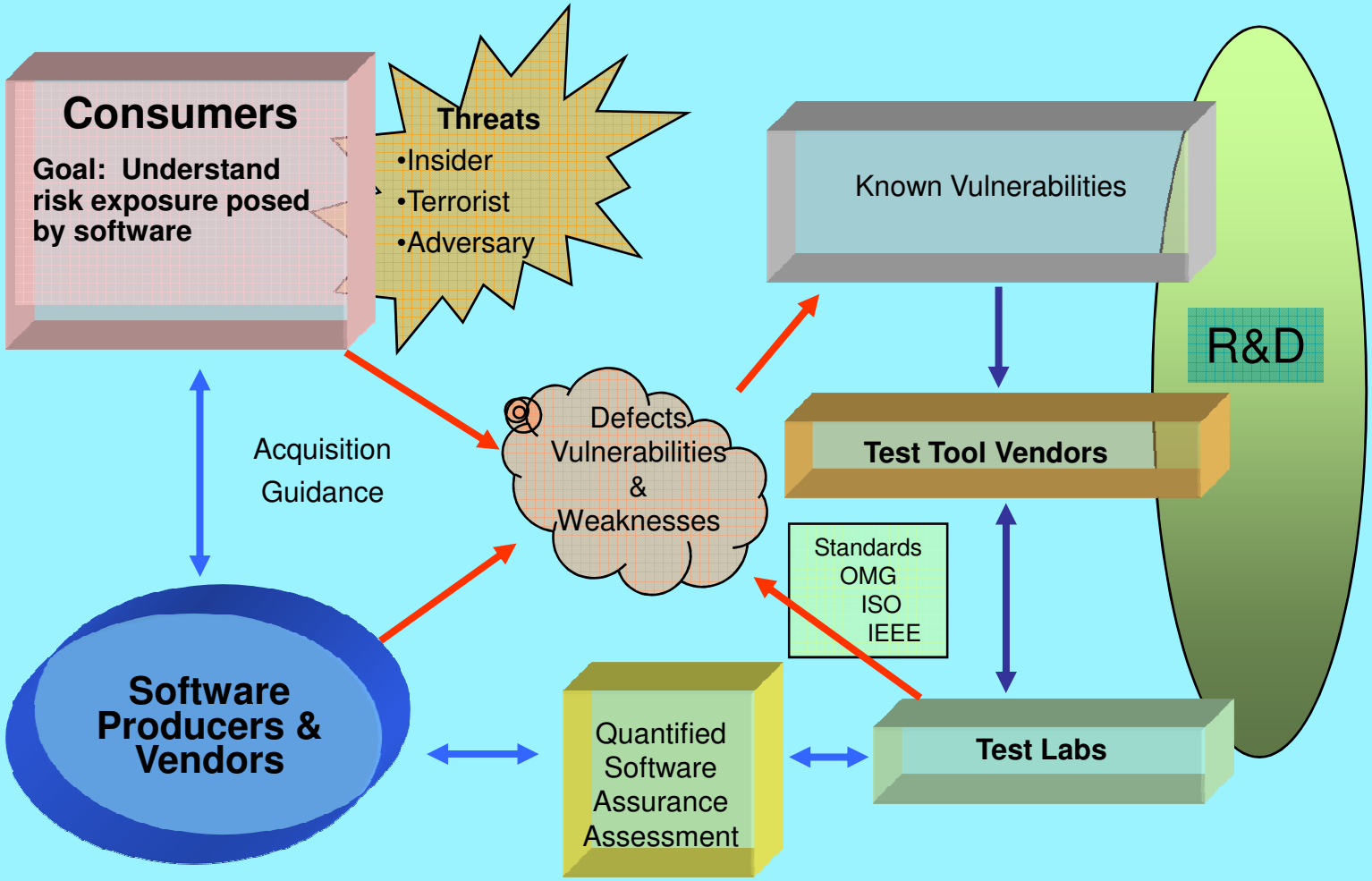
SwA Landscape



SwAC empowers software consumers to understand and reduce risk exposure attributable to software across the software supply chain.

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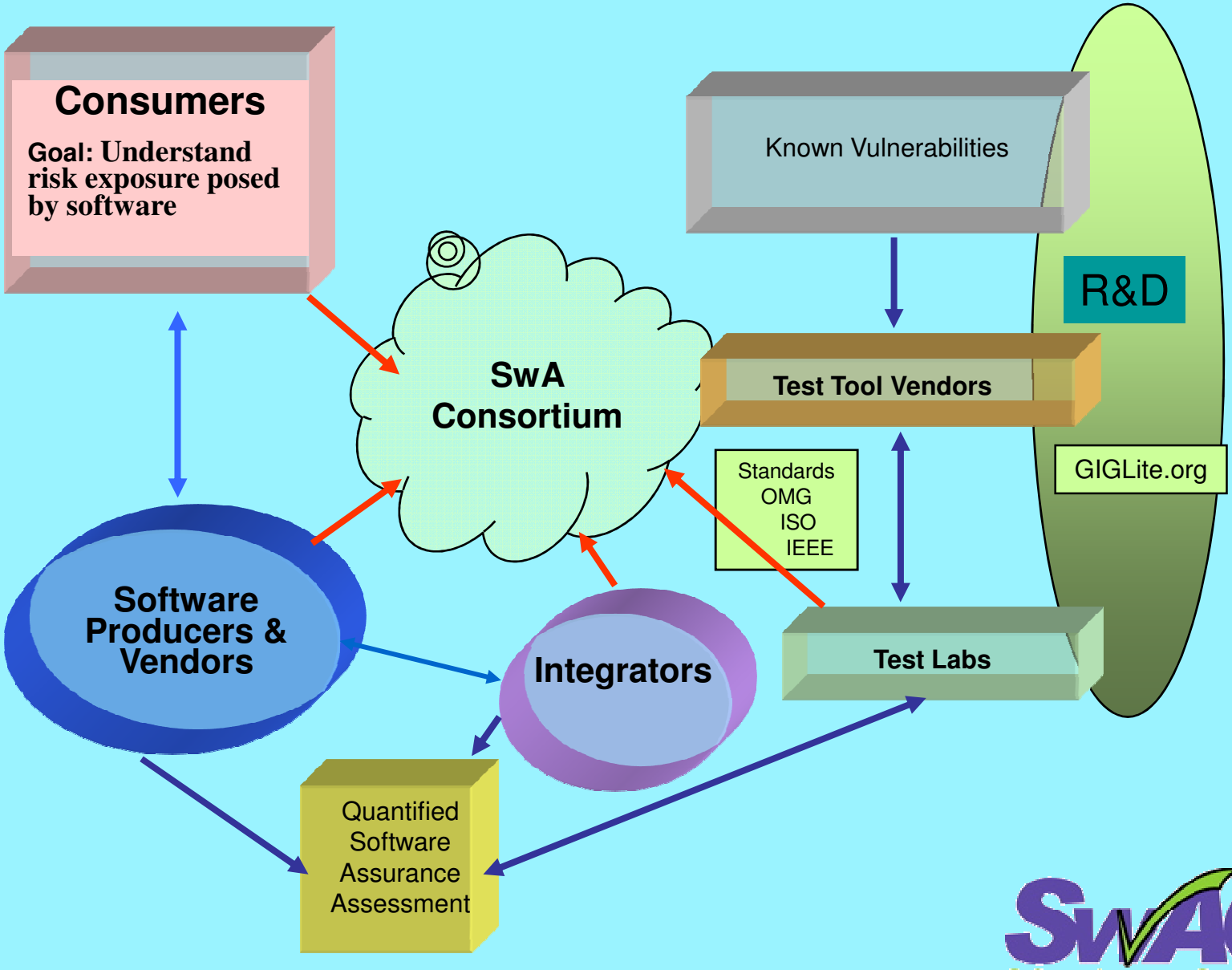
Role of the SwA Consortium



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Membership Categories

- Software end users
  - Commercial users
  - Integrators
  - Government users
  - Individuals
- Academic and research institutions
- Developers
- Liaison organizations
- Sponsors

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Questions?

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