

# Legal Issues in E-Commerce Testing: Emerging Requirements

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Speer, “Legal Requirements in E-Commerce Testing,” White Paper, Microsoft Solutions Framework (Redmond, WA: Microsoft Enterprise Services Division, April 9, 2000).

# Present Circumstances

The transition from concerns of functionality and robustness to security and confidentiality are requiring

(a) an awareness of and sensitivity to legal issues

(b) the incorporation of legal standards into test planning.

# Present Challenges

- Incorporating Legal Standards for E-Commerce Quality Into Testing
- Refining the processes through which legal requirements in E-Commerce are being articulated

# E-Commerce Taxonomy

- Information Access
- Self Services
- Shopping Services
- Interpersonal Communication
- Virtual Enterprises

# The E-Commerce Landscape

## In the United States

- Internet economy has grown 75% since last year, will generate more than \$500 billion in revenue this year
- E-commerce revenue has increased 150% since last year, will generate \$15 billion in revenue this year

# The E-Commerce Landscape

## Internet-related Patents Granted

1995	165
1996	371
1997	648
1998	2,193
1999	3,000+
2000	<sup>7</sup> 5,250*

# The E-Commerce Landscape

## “User Beware”

- Percent of all cases of credit card fraud attributable to electronic commerce: 50%
- Number of cases of “Identity Theft” reported to major credit bureaus each day: 1,500

# The E-Commerce Landscape

“User Beware”

Visitors who refuse to give information because they think it is too personal or worry about how it might be misused

- Financial 64 %
- Retail 59 %
- Insurance 56 %
- Health sites 9 44 %

# E-Commerce Projections

## In the United States

- By 2004 online sales are projected to reach \$200 billion
- By 2004 business-to-business transactions in E-commerce are projected to reach \$1.8 trillion

# Business-To-Business Quality Challenges

- To implement data interchange standards quickly and maintain them inexpensively
- To reconcile diverse data formats
- To secure document interchanges reliably

# E-Commerce Quality Challenges

- To assemble applications rapidly and easily
- To test component functionality and performance
- To model and simulate the real world

# E-Commerce Quality Challenges

- To deploy to a distributed 24x7 environment
- To monitor performance and transactions
- To analyze effectiveness and gather intelligence

# E-Commerce Quality Challenges

- To anticipate and manage legal risks
- To identify and test to relevant legal standards

# E-Commerce Testing

- Traditional (Functional)
  - Usability
  - Performance
  - Reliability
- Today (Risk-Sensitive)
  - Legal Standards
  - External Requirements
  - Business Rules

# E-Commerce Essentials

- Identify and assess all critical business functions
- Ensure Internet connectivity
- Secure online transactions
- Conduct privacy audit
- Conduct vulnerability analysis
- Prioritize recovery requirements
- Reinforce disaster avoidance measures

# A Broader Context for Rules and Sanctions

- Antitrust
- Securities regulation
- Copyright, trademark, patent
- Consumer protection
- Criminal law
- Content regulation
  - Free Speech
  - Filtering and Censorship
- Privacy and encryption

# Special Subjects

- “Denial of service” attacks
- Taxation
- Electronic Money
  - Authentication
  - Digital signatures
    - unforgeable
    - authenticatable
    - unalterable
    - non-reusable
  - Certification Authorities
  - Public and private key cryptography

# Electronic Contracting

- Tracking the Internet sale (If it happened, where did it happen?)
- Ongoing transactions
- Test cases for
  - proof of order
  - non-repudiation
  - receipt and recourse
- Requirements specific to private certification authorities
- Biometrics smart cards electronic data

# Conceptualizing Legal Issues in E-Commerce Testing

- Quality Criteria
- External Requirements
- Risk Management
- Domain of “The Bad Man”

# Identifying the Issues

- Concerns about **What** is being sold
- Concerns about **How** the goods or services are being sold
- Concerns about **Buyers** and **Target Markets**
- Following the **money**

# Transactional Issues

The Merchant (seller) desires

- Authentication
- Certification
- Confirmation
- Non-repudiation
- Payment
- Anonymity

# Transactional Issues

The Customer (buyer) desires

- Authentication
- Integrity
- Recourse
- Confirmation
- Privacy
- Anonymity

# E-Commerce Applications Testing

## Incorporating Legal Standards

- Business rules and policies
- Compliance-checking in static and dynamic testing
- Corporate interests and consumer protection
- “Markets of one”: real-time analysis of online behavior

# E-Commerce Applications Testing

## Incorporating Legal Standards

- Online service provider liability
- Privacy and confidentiality
  - Notice, choice, security, review and correction
  - Encryption
- Special populations<sub>25</sub>

# Designing Tests for the Transactional Context

## Internet, Extranet and Intranet

- Browsers, ISPs, routers, proxy servers and web servers
- Search engines, metatags and deep links
- Cookies
- Third-party components and integration
- State transitions

# Applying Lessons from Regulated Industries

- Medical and safety-critical test approaches
- Requirements management under time pressure
- Heuristic risk analysis

# Accommodating An Emerging Requirement Type

Conclusion