

Year 2000, How Can I Sue Thee?
Oh, Let Me Count the Ways!

Cem Kaner

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Disclaimer

- ◆ I'm new to Y2K law and am not an expert in it. The preparation behind this talk reflects a first serious effort to sort out the Y2K issues, not a final summary of research.
- ◆ This paper is written to build a bridge from the legal discussions to the software testing community. As a member of both communities, I see some opportunities for crosstalk.
- ◆ For legal advice on Y2K, consult your attorney.

Time for a Feeding Frenzy?

- ◆ J.P. Morgan estimates \$200 billion for remediation
- ◆ Gartner Group estimates \$600 billion
- ◆ Astonishingly low level of remediation expenditure in 1997
- ◆ Maybe 50% of companies will not be ready (Gartner Group)
- ◆ Who should pay for all the costs and consequences?
- ◆ Do we all get a guided tour of Lawsuitland?

A Trillion Dollars for Lawyers?

- ◆ Commonly quoted estimate of litigation arising from Y2K tags the cost at \$1 trillion. Compare:
 - Asbestos = \$1 billion per year
 - Superfund = \$1 billion per year
 - Tort litigation = \$29-36 billion per year
 - Kitchen sink + + = \$300 billion per year
- ◆ Where are you going to FIND a trillion bucks worth of lawyers?

Why All the Lawsuits?

- ◆ A lawsuit arises out of a failure to live up to a responsibility (duty). Duties arise:
 - in contracts
 - in the laws of public safety (criminal and tort)
 - in the laws of fraud and deceptive practices
 - in the laws of fiduciary (caretaker) responsibility
- ◆ No breach of a duty => No grounds for a lawsuit.

Scope of the Legal Problem

- ◆ Typical legal analysis involves a few general questions:
 - Who are the potential parties (people in the lawsuit)?
 - What are their duties?
 - Which duties might be breached due to a Y2K failure?
 - What actions can aggrieved parties take as a result of a Y2K breach?

Scope of the Technical Problem

Errors based on date

- ◆ Age-related errors
- ◆ Can't do future things errors (e.g. expiration dates on credit cards, long term mortgages, mag renewals)
- ◆ Premature expirations (service intervals, best-before dates)
- ◆ Length of intervals (century long phone calls)

Scope of the Technical Problem

Errors based on revisions

- ◆ 33% rule for bug fixes
- ◆ Principle of nonlocality
- ◆ Principle of nonproportionality

Scope of the Technical Problem

Example error based on revisions

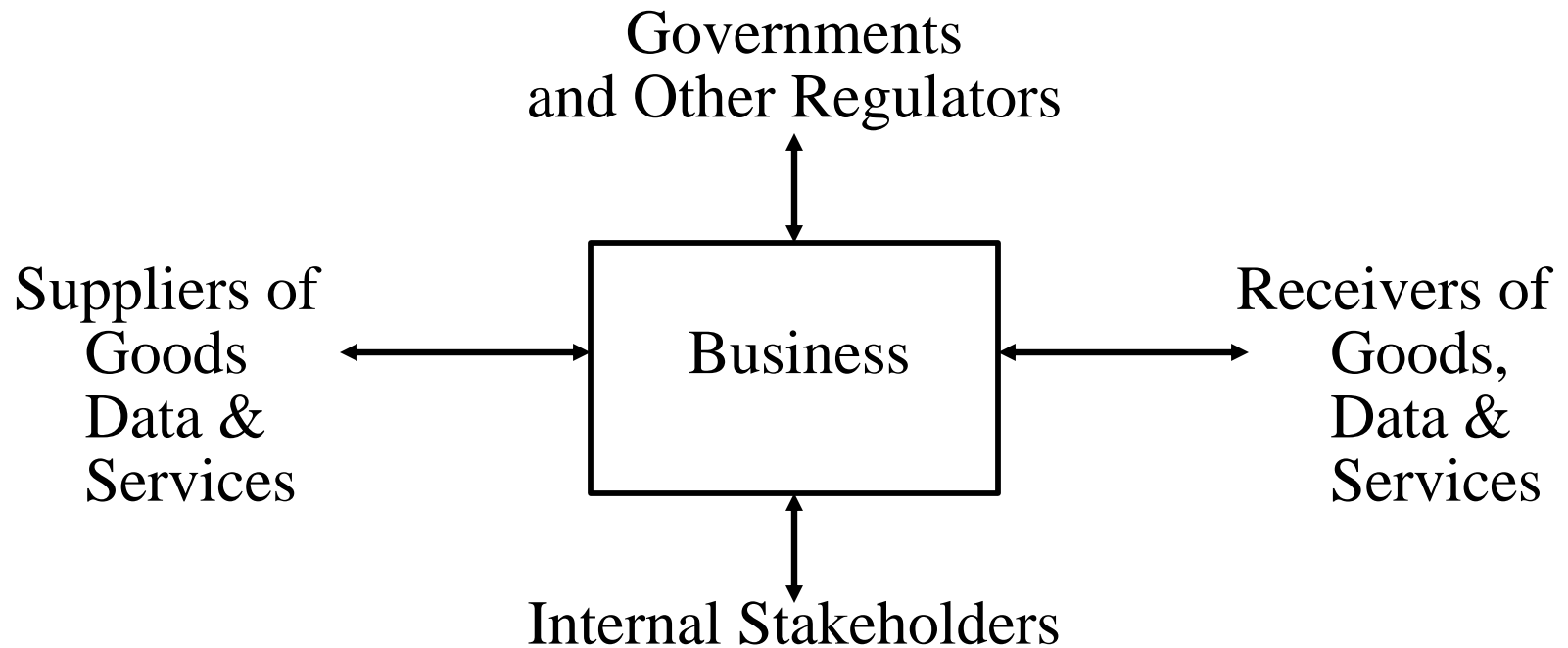
◆ Fixed-length record database:

- **Name** **60 chars** **location 1**
- **Birthdate** **6 chars** **location 61**
- **SSN** **8 chars** **location 67**
- **Other** **100 chars** **location 75**
- **Total record length 174 bytes.**
- **Now, repair Birthdate to 8 chars MM/DD/YYYY.**
- **Look up SSN? What if location of SSN is hardcoded?**

Scope

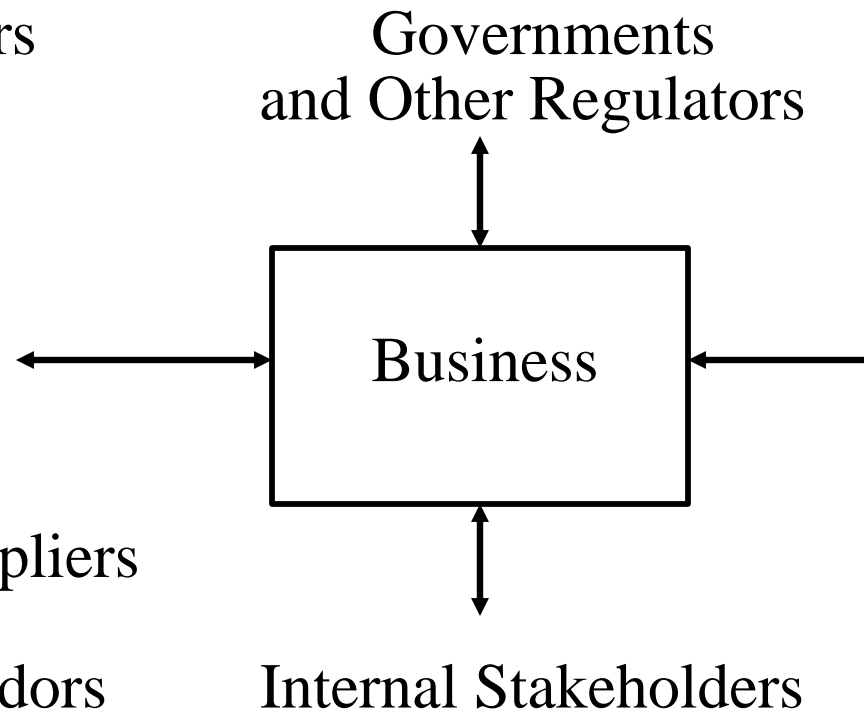
- ◆ The scope of this problem is enormous:
 - *Any relationship or duty that can be interfered with by a Y2K problem can become the subject of a lawsuit.*

A Business and its Relationships

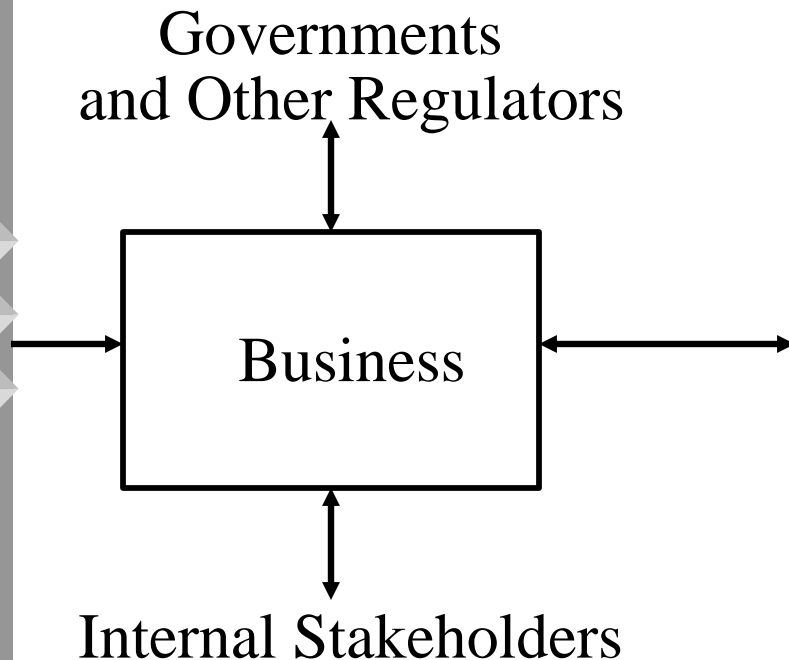


A Business and its Relationships

Software suppliers & IP owners
Software services
Outsource vendors
Y2K remediation services
Data suppliers
Landlord, facilities mgmt
Health services
Insurers
Diagnostics and other tool suppliers
Hardware (computer) vendors
Hardware (non-computer) vendors
Legal and financial services
Utilities
Shippers, mail delivery



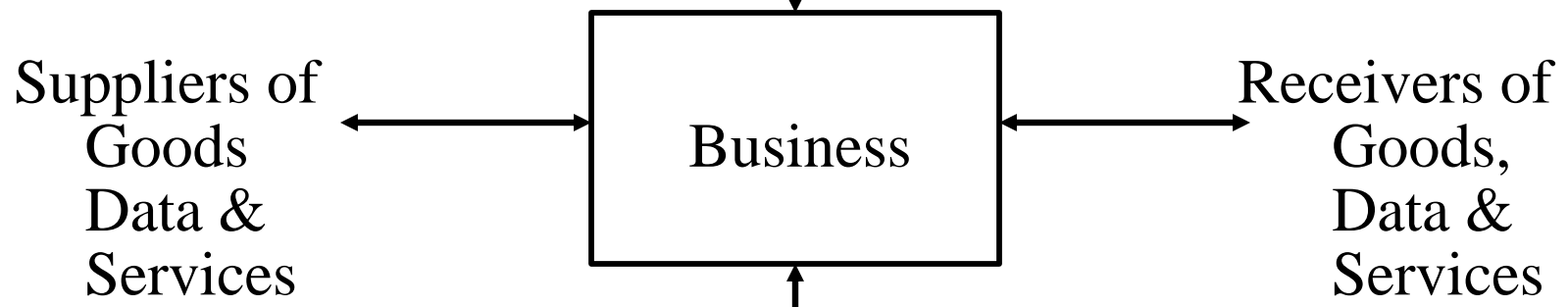
A Business and its Relationships



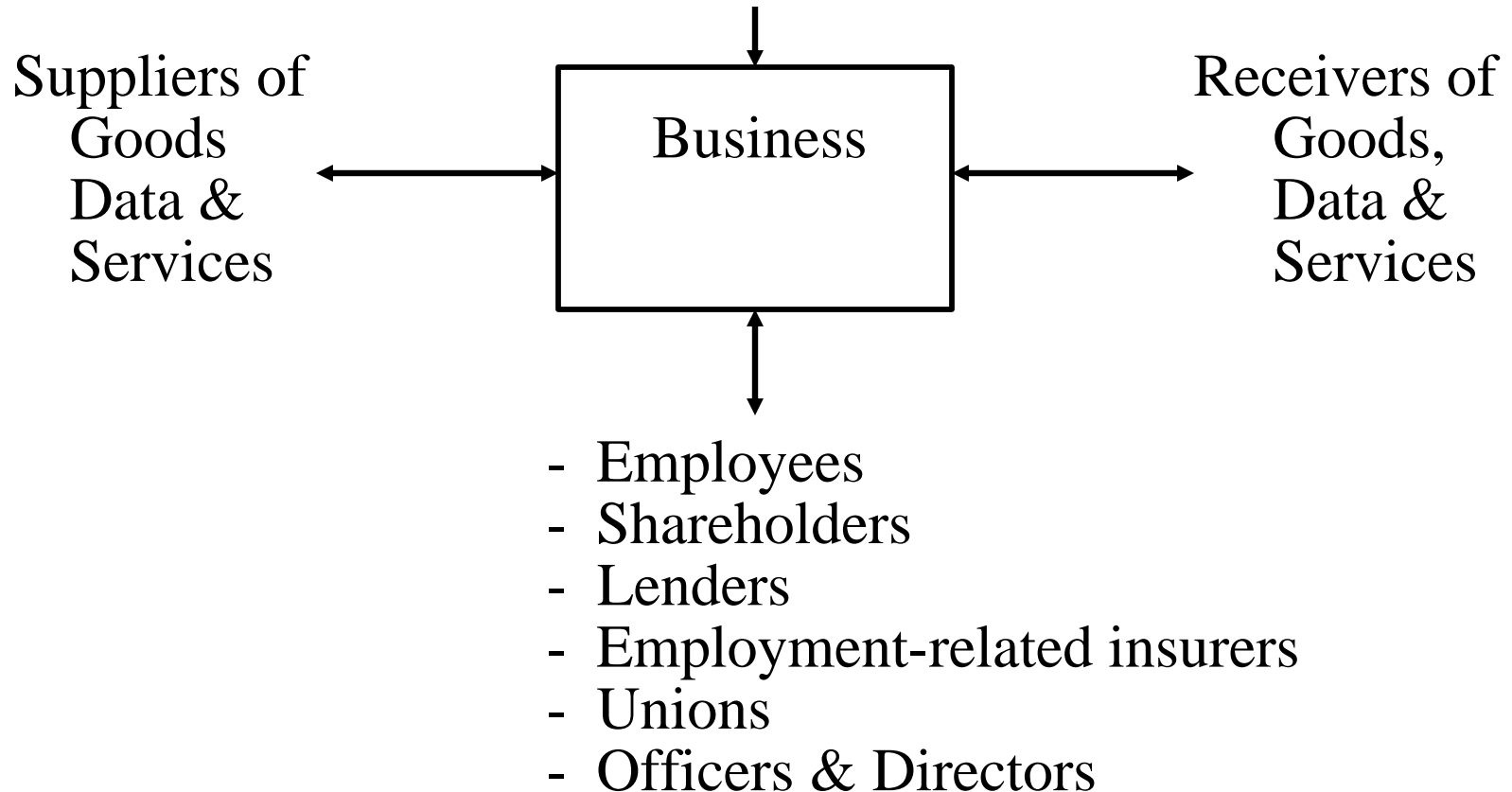
- Data receivers -
- Customers (goods) -
- Customers (software) -
- Customers (services) -
- Bills to customers -
- Payments to suppliers -
- Timed services to customers -
(e.g. warranty, expire dates)
- Scheduled services (e.g. -
checkups)
- Merchandise shipped -
- Third party users -
- Strategic partners -

A Business and its Relationships

- Local, state, and federal tax authorities
- State and federal securities regulators
- Corporate (e.g. nonprofit) mgmt overseers
- Auditors
- Labour (and plant safety) regulators
- Advertising regulators
- Product safety regulators
- Courts / admin agencies (scheduled events)



A Business and its Relationships



A FEW Examples of Plausible Legal Actions

- ◆ Breach of warranty, implied warranty
- ◆ Malpractice or other economic negligence
- ◆ Fraudulent or negligent misrepresentation (e.g. negligent certification)
- ◆ Unfair or deceptive trade practices
- ◆ Negligence or strict liability for injury or property damage
- ◆ Shareholder suits (sue Board for misrepresentation or for breach of fiduciary duty)

Are We Deer in the Headlights?

What can a QA (quality assistance) group do to help a company reduce its risk of Y2K litigation?

We Have Special Skills

- ◆ Empirical investigators
- ◆ Application (end use) oriented
- ◆ Able to cope with insufficient information
- ◆ Used to dealing with tight schedules
- ◆ Used to bad data and strange code
- ◆ Good reporting skills
- ◆ In many publishing companies, IT has a weak testing staff focused on glass box, or no testing staff--our services might be broadly needed.

Securities Litigation

- ◆ The core issues involve assessment:
 - Business judgment rule
 - Reasonable disclosure of risk
- ◆ *We can and should provide technical assessment.*

Embedded Systems

- ◆ Rule of thumb in products liability:
 - If you can't fix it, then you must warn about it.
- ◆ Many examples involve transition to a critical date, then disaster.
 - *We can identify interesting dates and risks and test.*
 - *Even if it can't fix, our company can warn.*

Whacky Billing, etc.

- ◆ FDIC Cease and Desist Order focused on good process rather than on elimination of Y2K problems.
- ◆ Similarly, deceptive practices suits for bad billing will be better defended if there is evidence of a good faith effort to prevent errors.

Meltdown from Bad Data

- ◆ Several compliance definitions assume that incoming data will be good.
 - *We're testers. We know better than to assume this.*
- ◆ Simulate bad input from data trading partners and trace the effects.
 - *If you can't prevent it, you can at least detect and reject it.*

Test Effort Documentation

- ◆ Some of you know me well enough to know how much I despise spending time documenting test efforts. My goal is to do the minimum necessary, to leave more time for testing and advocating.
- ◆ *Minimum is not zero.*
- ◆ In the face of a credible litigation risk, documentation is defensive evidence of value. We must develop appropriate materials.

Conclusion

- ◆ Lawsuits are like raising horses (badly):
 - You can prevent problems by building a good barn.
 - You can inspect the barn and fix problems.
 - Or (*the lawsuit analogy*) you can do post-disaster damage control--when the horse gets out, wildly runs away and breaks its leg, you can sell the carcass after you shoot the horse.
- ◆ Let's work on improving the barn and saving the horses.