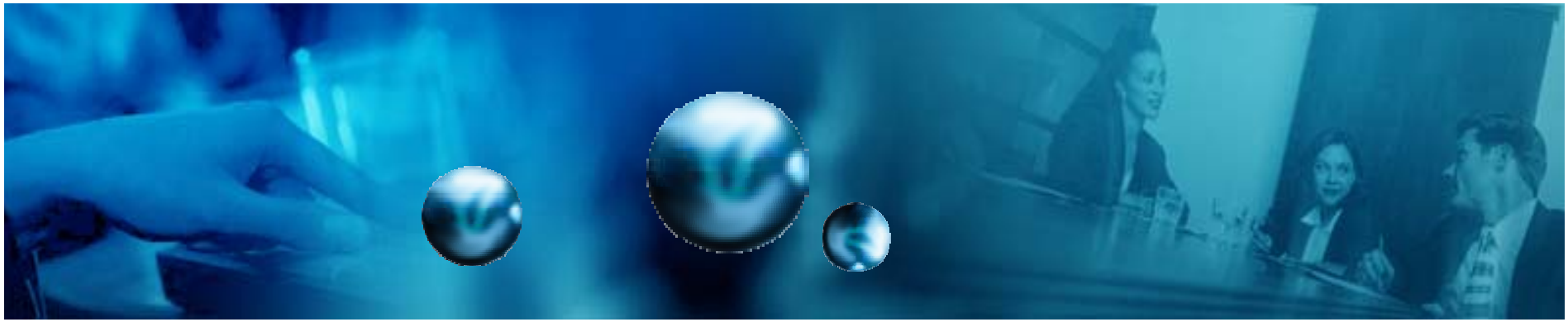
Synapsis Technology

product lifecycle intelligence



Looking Beyond EU RoHS and WEEE

German Avila

Product Manager, Environmental Solutions

ROHS/WEEE worldwide

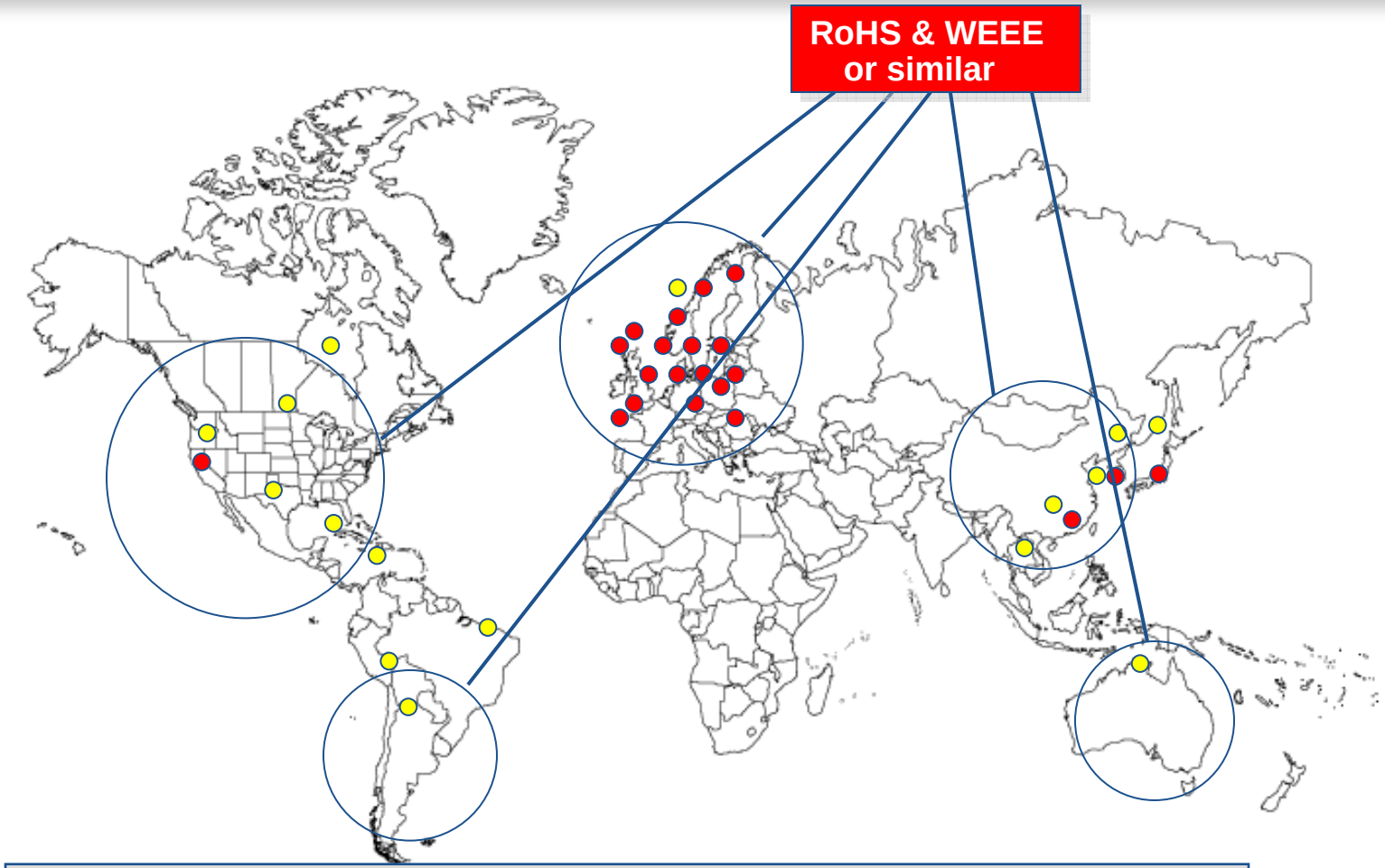
July 1st, 2006

Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.

Winston Churchill recounting the significance of the first major Allied victory against Nazi Germany in El Alamein, Africa.

November 10, 1942

Environmental Regulations on EEE



Every region of the world has environmental regulations that affect electronic products

Beyond EU RoHS and WEEE

Region	Legislation	Status	Date	Scope	Certification	Testing	Exemptions	Labeling
EU	EU ROHS	Passed	July, 2006	8 product categories	No - Self-certification	No	Yes	No
China	China RoHS	Proposed	March, 2007	Electronic information products and product catalogue (consumer electronics)	pre-market certification by a pre-certified Chinese lab	Yes. (Expected to be consistent with TCG111 wG3)	No formal petition process	1. Toxic substance content marking 2. Packaging material content marking 3. Safe use period marking 4. country of origin
Japan	Japan RoHS	Proposed	?	?	?	?	?	J-MOSS - orange "R" - contains ROHS substance or green "G" - does not contain.
USA, California	CA ROHS	Passed	January, 2007	Covered electronic device (CED) -video display > 4" i.e. CRTs LCD monitors Plasma televisions	?	?	Yes	No
Mercosur - Argentina, Uruguay, Paraguay and Brazil.	Policy on Environmental Management of Wastes and Post-Consumer Responsibility	Proposed	?	electronics, batteries, cellular telephones and mercury or fluorescent lamps	?	?		

RoHS in Asia

China

- *"Electronic information products refers to products and parts made with electronic information technology, which include electronic radar products, electronic communication products, broadcast and television products, computer products, household electronic products, electronic measurement and instrument products, electronic products for special use, electronic component products, electronic application products, electronic material products and software products, etc."*

- The Product Catalog will define:
  - The list of products subject to restrictions (consumer electronics) and Environment-Friendly Use Period
  - The list of hazardous substances, thresholds and restriction timeline,

- Catalog definition expected by late 2006

China RoHS: Certification

- All products listed in the catalog will be subject to mandatory certification
- Certification will be added to existing CCC (China Compulsory Certification) marking system
  - Imported products will be subject to examination and inspection at the entry port
  - Product will be released from customs only once this is completed

RoHS in the US

- California Electronic Waste Recycling Act of 2003
  - Refers back to the EU RoHS (2002/95/EC)
  - Scope is limited to “covered electronic devices”: CRTs, LCD, Plasma Displays > 4”
  - Attention: A.B. 2202 expands the scope to that of the EU RoHS. The bill was passed by the assembly and is now at the senate.
- Other States
  - Mercury: CT, NH, RI, WA
  - Mercury in batteries: FL
  - PBB and PBDE: HA, MD, ME, MI, NY, OR, WA

WEEE in the US

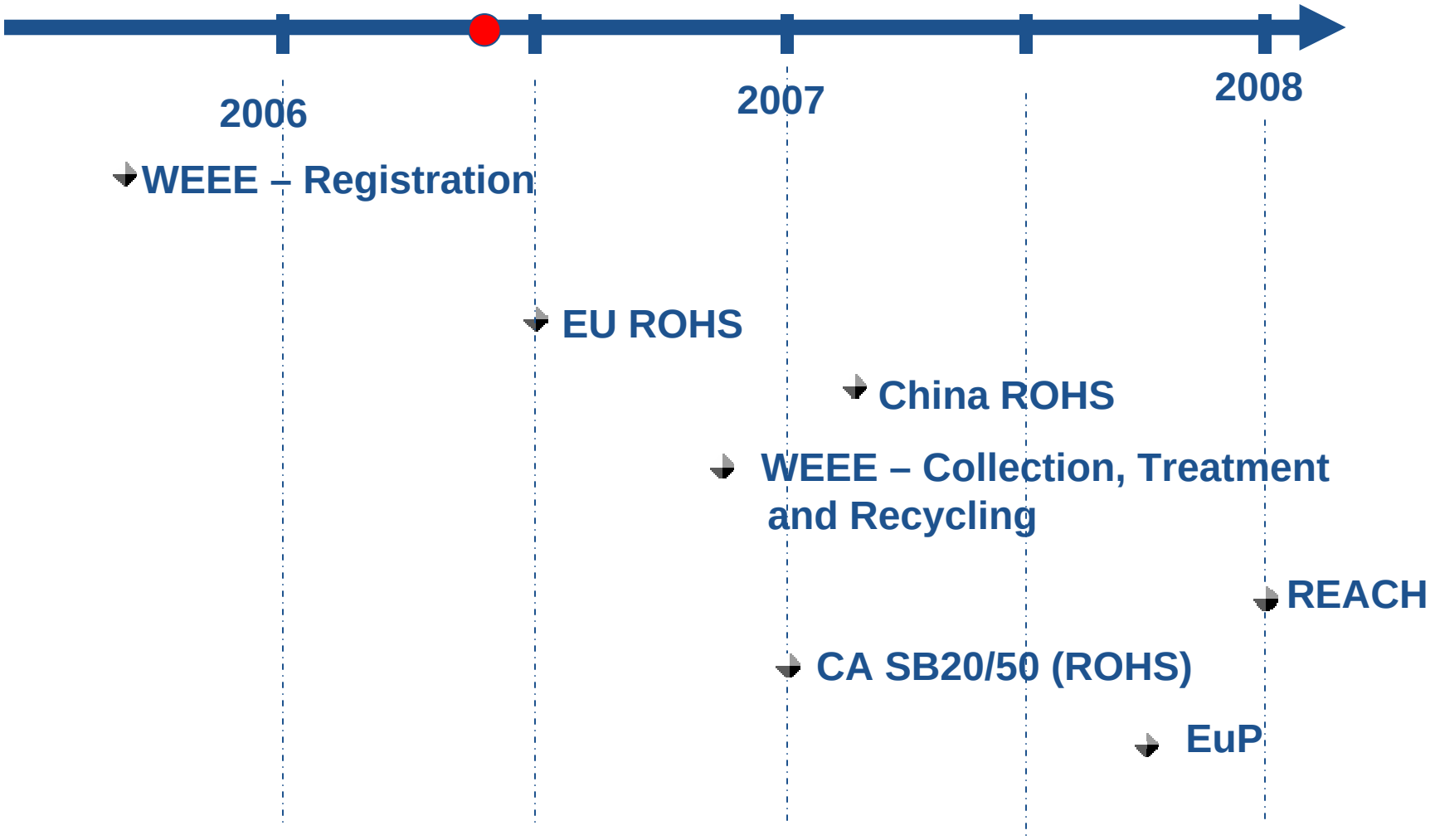
- There are 3 regulations in place today
  - California
  - Maryland
  - Maine

- Current legislation in 21 states
  - CA, HI, IA, IL, KY, MA, MI, MN, MS (died), NC, NE
  - (postponed), NH, NJ, NM, NY, PA, RI, SC, TN, UT, VT, WA, WI

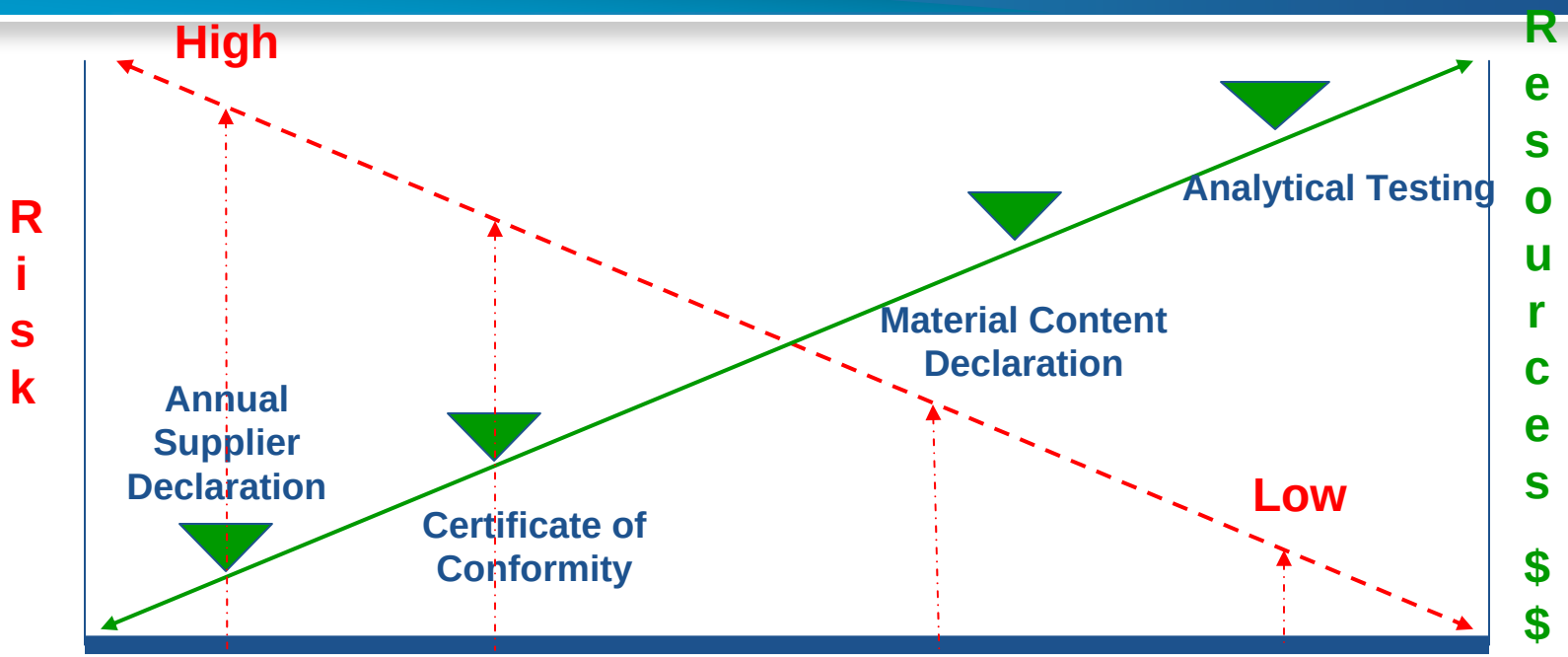
RoHS/WEEE in Latin America

- Mercosur (Argentina, Paraguay, Uruguay and Brazil)
- Colombia – Hazardous Waste
- Mexico – continued research on electronic waste impact
- Costa Rica – draft electronic waste regulation focusing on computers, printing accessories, photocopiers, scanners, digital cameras, cellular telephones and batteries, and fluorescent lamps.

Environmental Directives Timeline



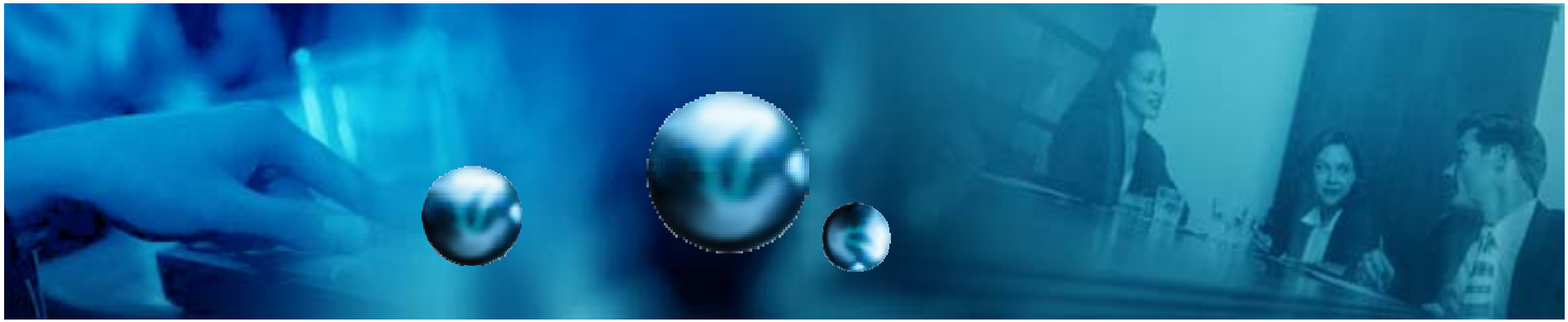
Risk vs. Resources



Risk-based Compliance Framework

- Contractual agreements with supply base
- Material Content Declarations
- Information System
- Analytical Testing
- Audits

EU RoHS Enforcement



Enforcement Principles

- Consistent interpretation across Member States of products that fall within the scope of RoHS
- Presumption that products conform with its requirements ***(the act of putting the product on the market after July 1, 2006)***
- **Self-declaration by producers**

Reference: RoHS Enforcement Guidance Document v1

Enforcement Process

- Selection of EEE categories and products for further investigation will be based on:
  - Market Intelligence
  - Random selection
  - Products known to contain materials of high concern
  - High volume products
  - Short life products
  - Consumer products unlikely to be recycled
  - Notification of concern from external parties
  - Notification of concern from other Member States
- Enforcement authorities may take whatever action deemed necessary
  - Remedial action to bring product to compliance
  - Removal of goods from market

Reference: RoHS Enforcement Guidance Document v1

Compliance Documentation

Two routes for self-declaration:

A. Process-based Technical Documentation

- Compliance Assurance System
  - Producer's internal system to ensure RoHS compliance (business processes, systems in place, measures taken, tools used)
- Evidence of active control of system
  - Internal and supplier audits
  - Sample results of product assessments
  - Data system used to manage RoHS data

Reference: RoHS Enforcement Guidance Document v1

Compliance Documentation

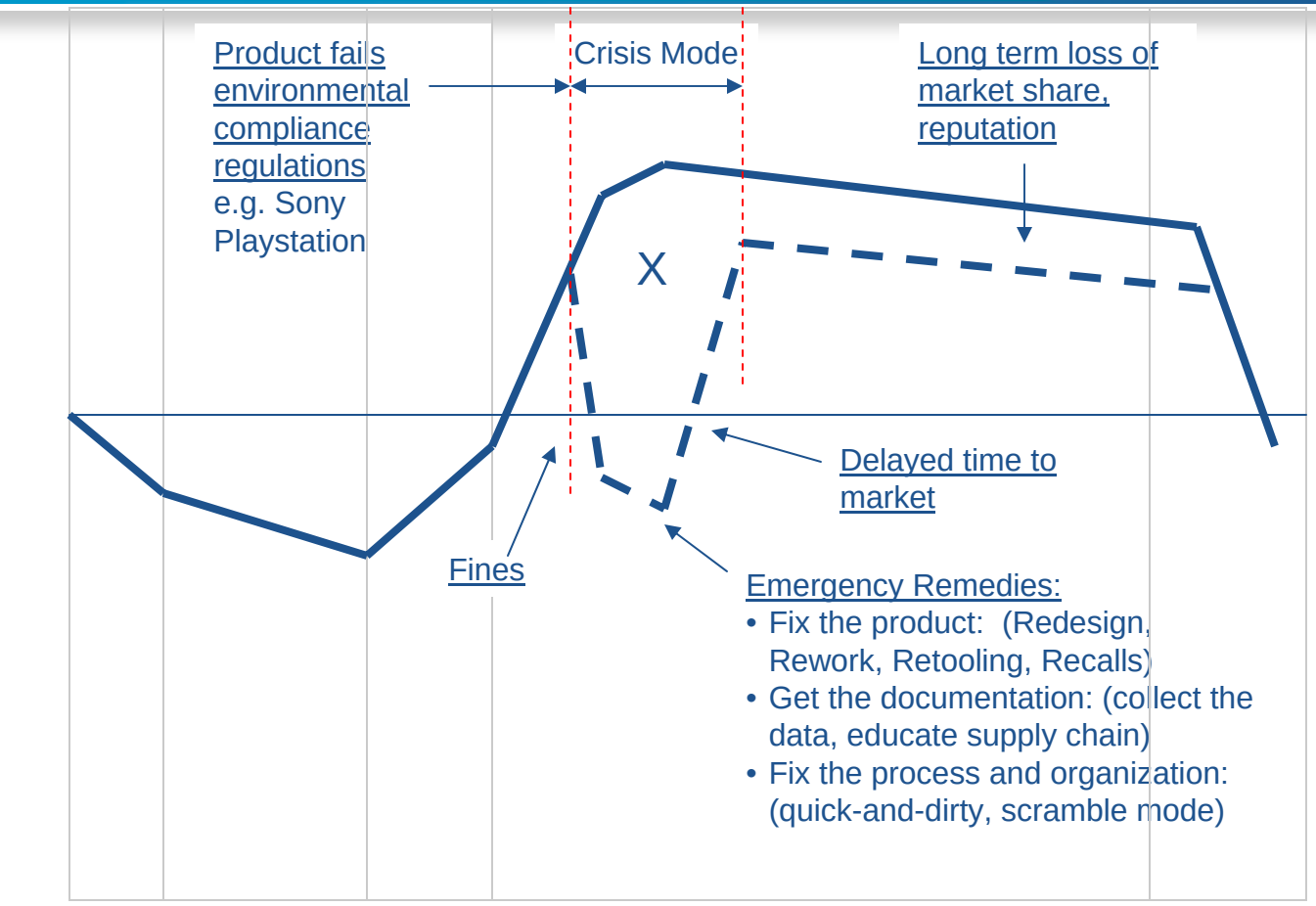
B. Product/Part-based Technical Documentation

- Producer declaration that use of restricted substances are within permitted levels
- Completed material declaration for each part (limited to RoHS Substances)
- Analysis for homogeneous materials in parts
- **Process to assess that material declarations can be trusted**

OR → Additional information as specified by enforcement agency if sufficient evidence is not provided

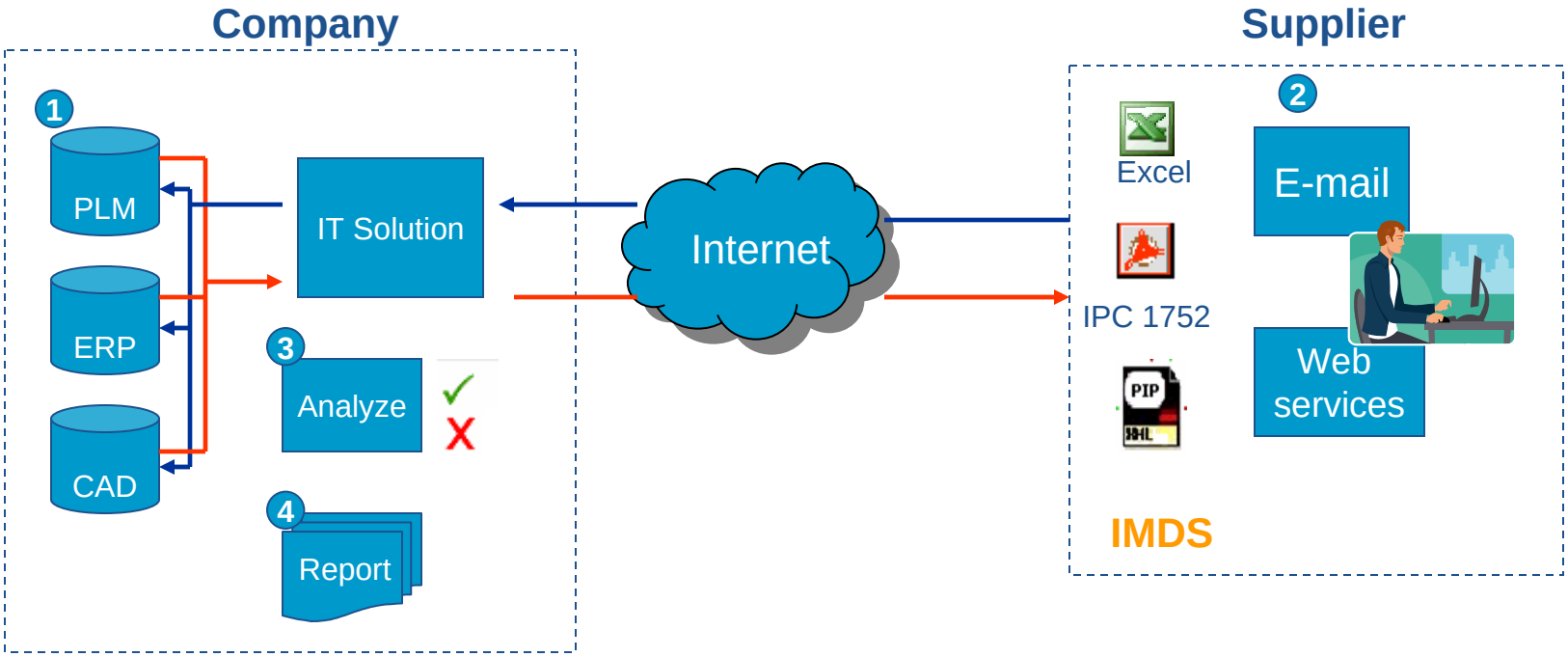
Reference: RoHS Enforcement Guidance Document v1

The cost of compliance failure



Area, x, represents the cost of waiting for one product. Multiply this across all products affected, and to some extent the number of individual regs that may apply.

Emerging technologies – Enabling compliance



Solution Requirements

1. Integrate/leverage existing infrastructure and business processes
2. Automate material content data exchange
   - Leverage standards i.e. IPC 1752, RosettaNet
3. Compliance analysis
   - Ensure data quality
   - Flexible support for multiple regulatory, internal or customer requirements
   - Multiple levels of disclosure
   - Exemption Management
4. Report to customers and/or regulators
   - Sufficient level of detail and documentation (audit trail)

www.synapsistech.com

German Avila

gavila@synapsistech.com
267-708-0007