



OBJECT MANAGEMENT GROUP

Standards in Support of a “SWIFT of Customs”

Andrew Watson
OMG Technical Director

Introducing OMG

- **International industrial consortium that publishes enterprise integration specifications**
 - **The Home of Modelling Standards, including UML & BPMN**
 - **Rapid publication, followed by ongoing maintenance**
 - **Builds communities of practice around standards**
- **Specifications freely available, widely-implemented & used**
- **Not-for-profit, controlled by its 300+ members**
 - **Open membership, one-member-one-vote**
 - **Roughly 50:50 vendors:users**
 - **50% North America, 25% Europe, 25% rest of the world**
 - **Excellent relations with de jure standards orgs (e.g. ISO)**

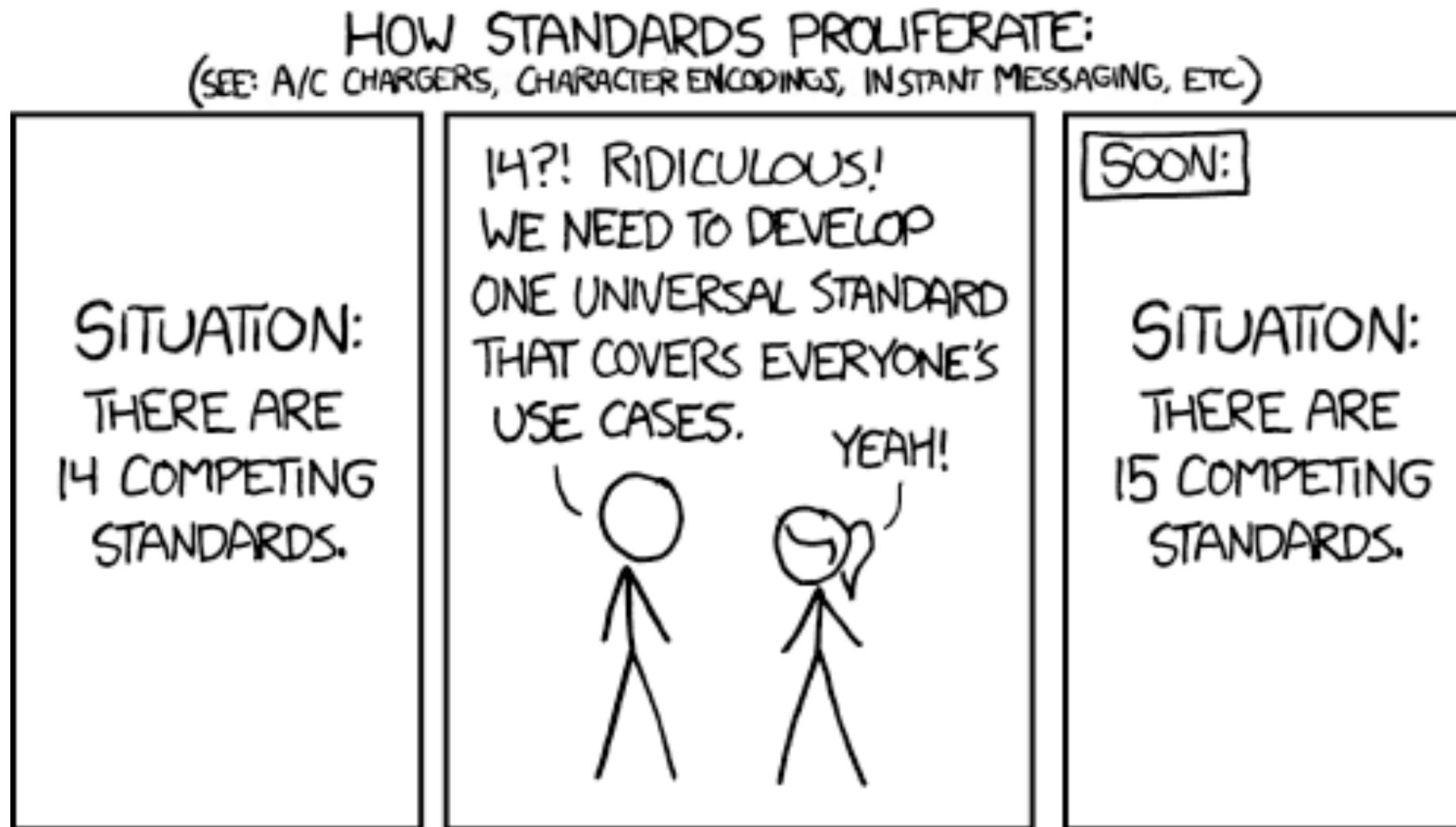
OMG at work: Unified Modelling Language

- Successor to multiplicity of OO A&D notations of early 90s
- Result of OMG process begun in 1994, completed 1997
 - UML market grew ~20% pa during 2001-3 IT recession
- By 2008 > 70% of Software Development Orgs used UML
 - Also used for data modelling, e.g. WCO data model
 - Dozens of tools
 - UML books, training
 - Engineer certification
 - Custom profiles (e.g. SoaML)
 - UML 1 & 2 adopted by ISO/IEC
- Standards not a zero-sum game



Standards - Good News, Bad News

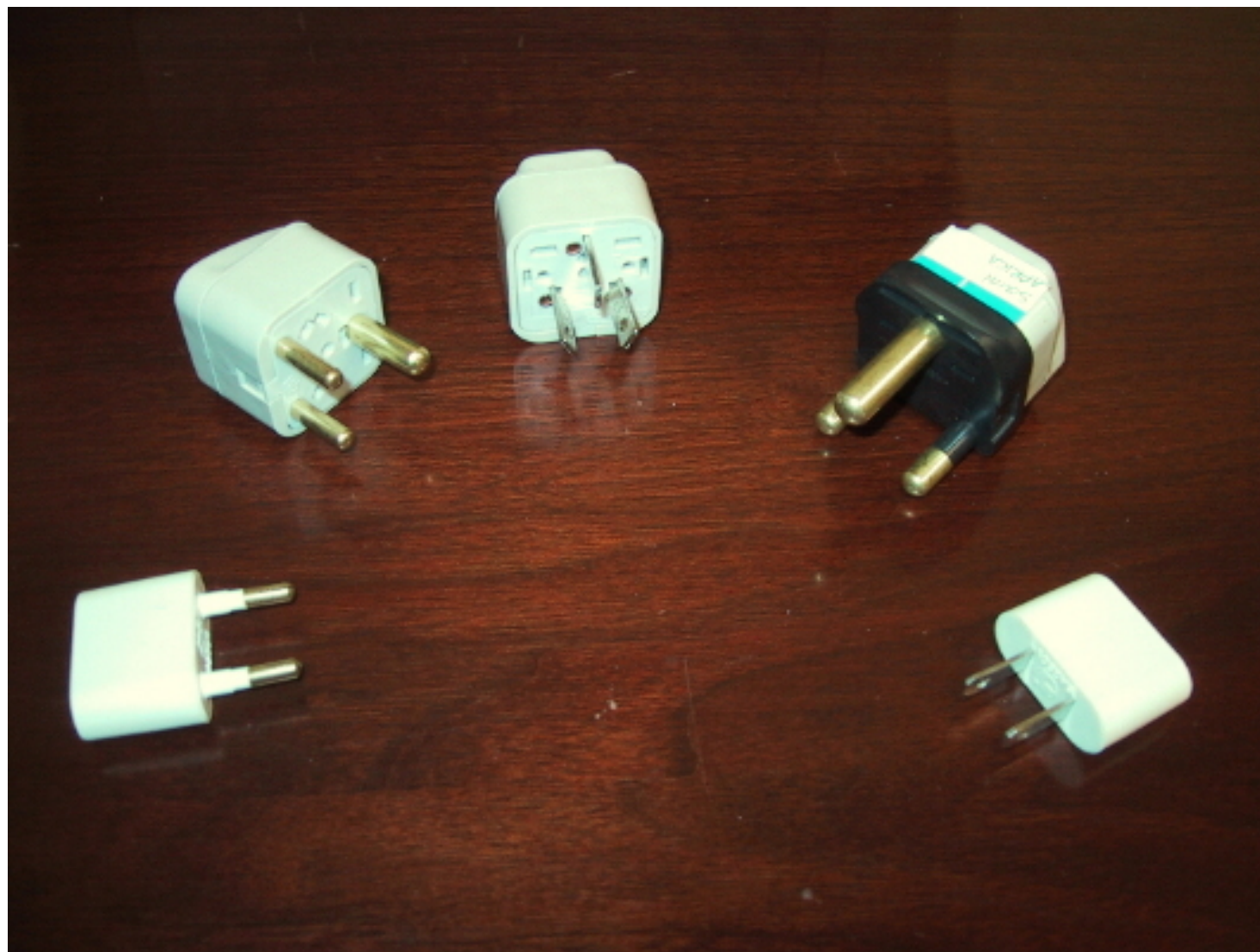
- **Good News: Standards provide the foundation for interoperability across every engineering discipline**
 - **Transport, Communication, Information Technology ...**
- **Bad News: Legacy (i.e. successful) systems live for decades**
 - **Hence any heterogeneity becomes permanent**
 - **In IT (80% of working software in COBOL, invented 1960)**
 - **In Transport (how many rail gauges used across Europe?)**
 - **Domestic electrical supply (110V, 220V, 240V ...)**
- **“The wonderful thing about standards is that there are so many to choose from”**
 - **Variously attributed to Grace Hopper, Andrew Tanenbaum, Patricia Seybold, Ken Olsen**



<http://xkcd.com/927/> Randall Munroe

Bringing down the cost of adaption

- Few standards will replace everything that has gone before
 - We must also focus on bringing down the cost of adaption

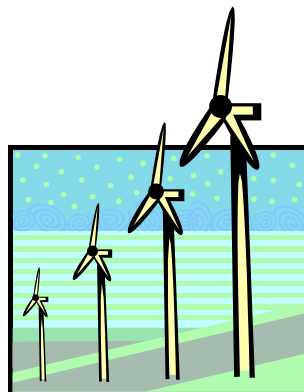


Information formats aren't exempt (1)

- Any industry using electronic data exchange already has dozens (perhaps hundreds) of message formats
- Financial payments is a good example:
 - ISO 15022, ISO 20022
 - SWIFT FIN, MT
 - US Federal Reserve (FedWire)
 - Bank of Japan (“The Galapagos Islands”)
 - Related financial instrument trading (FIX, IFX, TWIST, FPML)
 - (etc)
- Hundreds of message formats in use; old formats rarely die
 - One major bank uses 78 different payment messages

Information formats aren't exempt (2)

- **Message volumes can be huge**
 - **VISA has 20,000 member banks, averages 6,800 pmts/sec**
- **Users typically rely on customised conversion software**
 - **Cost & time sink that delivers no value to the enterprise**
 - **Introduces risk of undetected conversion errors**
 - **Insecure or incomplete transactions enormously costly**
- **Many domains share the same problem**
 - **Healthcare Records, Energy Trading, eCommerce, etc, etc.**



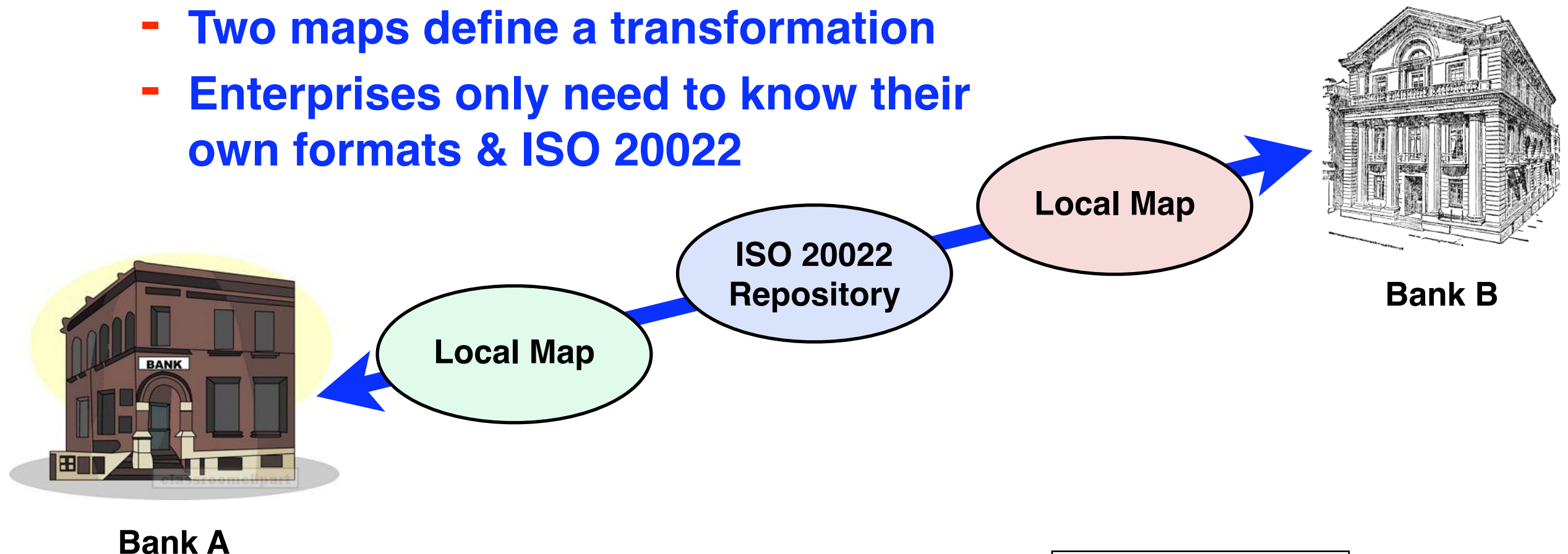
Adaption via standards

- Shared problem at 2 financial integration giants (SWIFT, VISA)
 - In response, worked with OMG to develop Model-Driven Message Interoperability (MDMI) standard
- MDMI defines man- and machine-readable maps for extraction of data from source message, insertion into target messages
- Based on a formal model (defined by OMG Standards)
 - Specified in UML, the widely-accepted international modelling standard
- Relies on & supports ISO 20022
 - UML already underlies ISO 20022 messaging framework



MDMI: Reference Dictionary

- ISO 20022 Repository used as Financial Services Reference Dictionary
- Each enterprise has existing & new message formats it uses
 - ... but can create its own standardised MDMI maps
 - Two maps define a transformation
 - Enterprises only need to know their own formats & ISO 20022



Summary

- **Standards provide the bedrock for information exchange between separate organisations**
 - But rarely does one universal standard last for all time
 - Organisations that work across multiple businesses or jurisdictions cannot legislate away diversity (or history)
- **Hand-written format conversion software is costly, potentially buggy, delivers no value to the enterprise**
 - Introduces risk of undetected conversion errors
- **Model-based interoperability frameworks (e.g. MDMI) lower costs & raising quality of translations**
 - Proven by SWIFT & VISA
 - We can repeat these successes in other domains

For more information

OMG: <http://www.omg.org>

Email: andrew@omg.org

Thank You!