



Towers Watson

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*Delivering high performance analytics from
workstations, datacenters and clouds*

Agenda

- About Towers Watson
 - Software products
 - Industry trends
- Software licensing strategy
- SafeNet solution
- Current status & future challenges

About Towers Watson

TOWERS WATSON 

- Provides people, risk and financial management solutions and advice globally
- 14,000 employees
- Offices in 37 countries

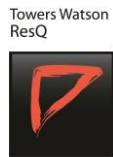
Risk Consulting & Software (RCS)

- Primarily focused on insurance sector
- ***Risk analytics and decision support software***
- IT deployment consulting, actuarial consulting and management consulting

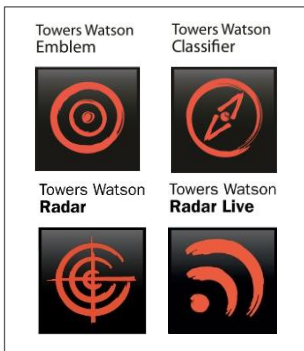
RCS Software



- Financial modelling platforms
- Multiple product editions
- Scalable distributed processing and governance



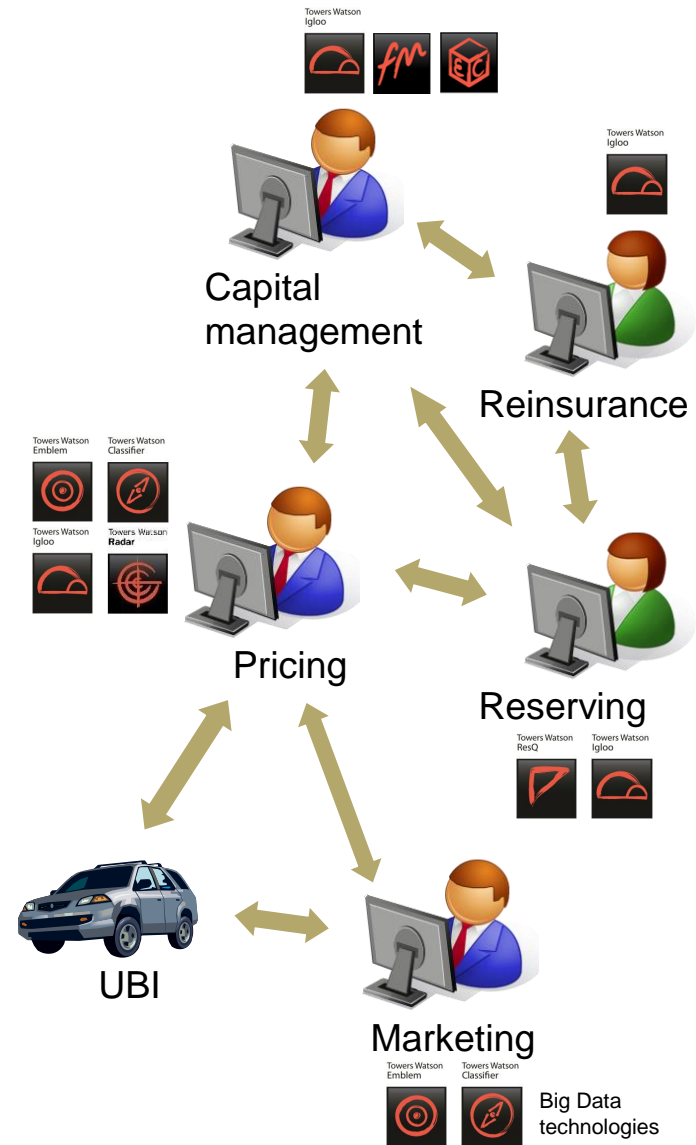
- Team loss reserving platform
- Embedding, automation, governance



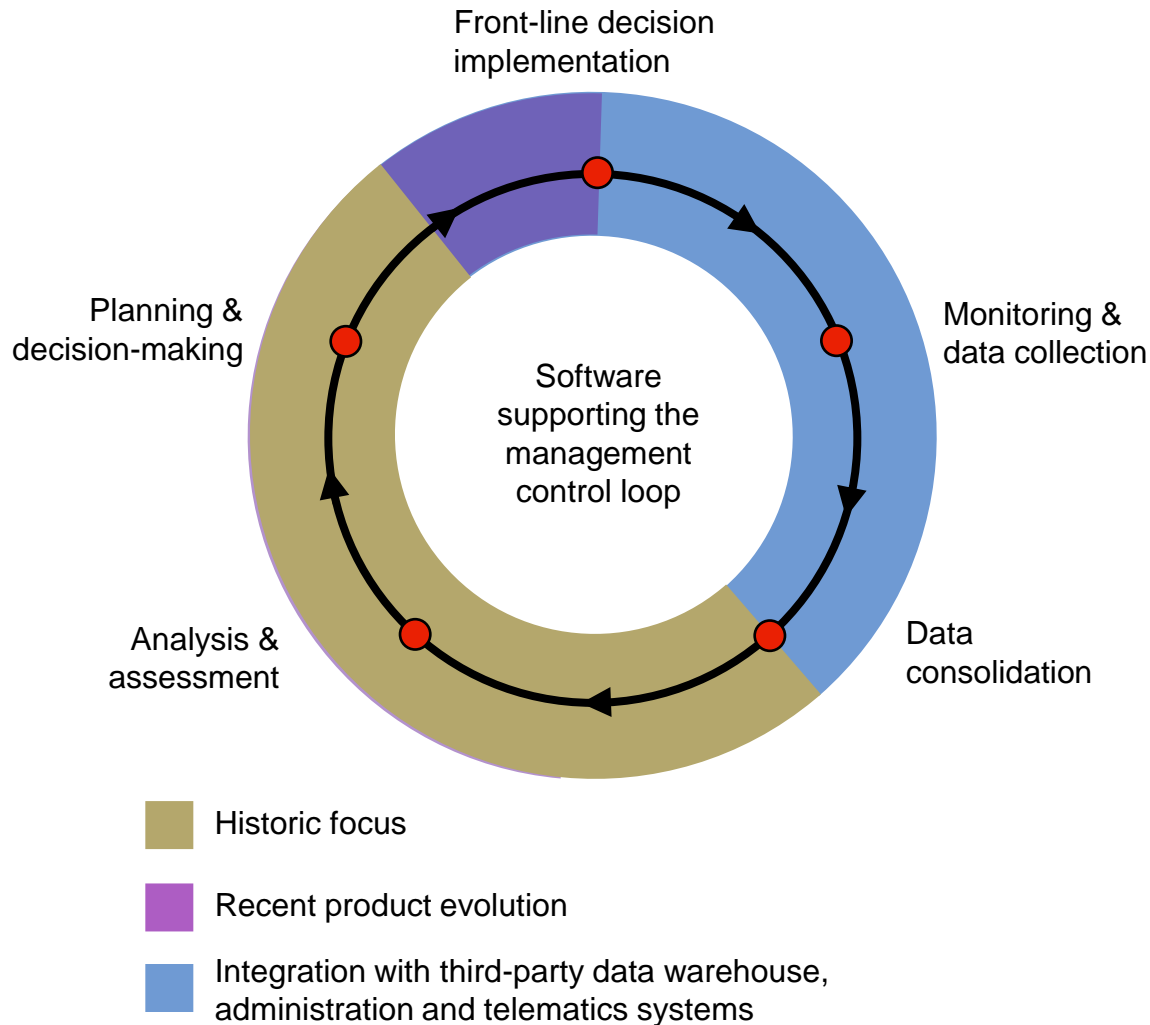
- Volume lines pricing suite
- Predictive modelling
- Geographic risk classification
- Pricing decision support
- Price optimisation
- On-line real-time price calculation service



- Usage-Based Insurance
- Driving risk assessment / coaching



RCS Software Characteristics



IT Characteristics

- Rich graphical user interaction
- Increasing data scale
 - Hundreds of millions growing to billions of records
- Data management
- Highly configurable and extensible
 - Modelling environments, not fixed models
 - APIs
- Increasing focus on Enterprise deployments, distributed processing and SaaS

Industry trends

- Large scale parallel computing
 - $10^8 \dots 10^{12} \dots 10^{15}$ calculations/sec
 - But switching speeds not increasing ...
- On demand cloud
- Software as a service
- “Big Data” and “Big Analytics”



We need to support the full spectrum of deployments

Software Licensing Strategy

- License fees reflect scale and value
- 3 dimensional licensing model
 - Time (annual fees ... pay per minute)
 - Features (product editions, options)
 - Concurrency (users, system capacity parameters, workstation-only)
- Agnostic deployment environment
 - Workstation, data center, cloud
 - Hardware key for workstation, software or service solution for rest
- Use third-party technology where appropriate
 - Guard against casual piracy and accidental overuse
 - Facilitate license administration

SafeNet Solution (Phase 1)

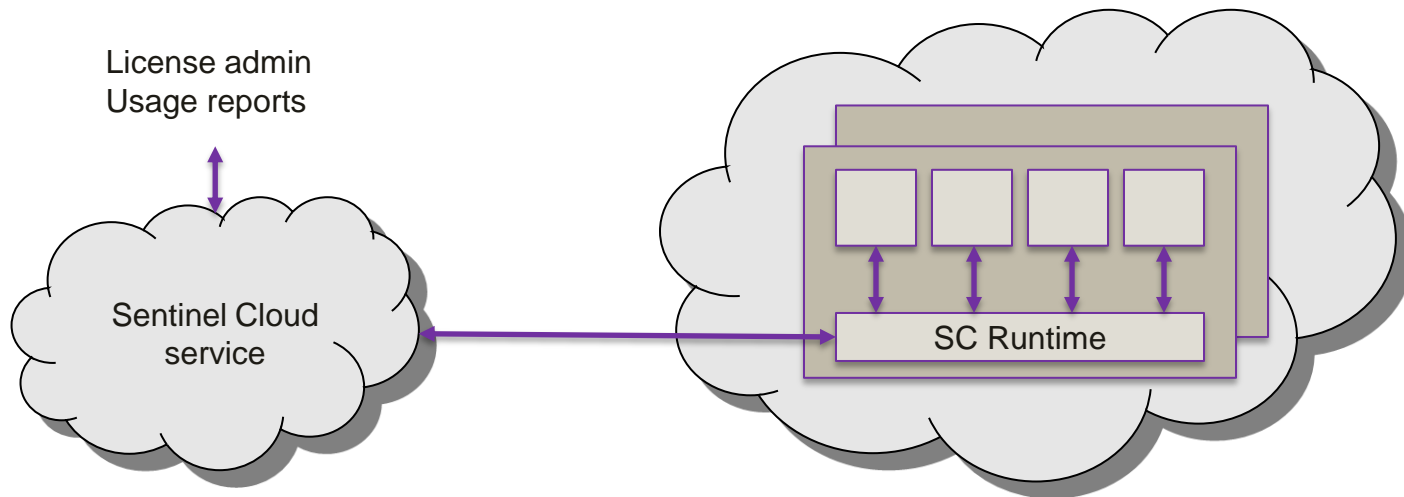
- Reviewed options to replace ageing HardLock solution
 - Internal development, third-party vendors
- Selected SafeNet Sentinel HASP/LDK (& Sentinel Cloud)
 - Hardware or software key agnostic (for legacy commercial constraints)
 - SafeNet proved themselves to be a *partner* rather than simply a vendor
- Towers Watson Refinements
 - No dongle power cell for time-based licensing (extend instruction rather than dongle return)
 - Extend instruction batching (to reduce customer admin overhead)
 - Customized license administration application on top of Business Studio database
- System now supports many thousands of license keys
 - Regular refresh of Sentinel LDK runtime services

SafeNet Solution (Phase 2)

- To manage capacity-based licensing in super-computing scale calculations in the cloud
 - Thousands of processing cores used concurrently (financial modeling)
 - Support optional cloud payment model (pay-as-you-use per minute)
 - Impose concurrency constraints and allow for post-paid invoicing
- Overcomes Sentinel HASP limitations
 - Server incompatibility with some cloud VMs (auto-migration)

Sentinel Cloud Journey

- Trialed early Sentinel Cloud service
 - Supporting concurrent licensing model and post-paid model



- HPC deployment of MoSes Azure
 - 750 VMs, 3000 processing cores
 - Core concurrency monitored and limited by Sentinel Cloud

Experiences

- **Early Sentinel Cloud service**
 - Insufficient scalability, response time, reliability
 - Not originally developed with TW use-case in mind
- **Joint initiative**
 - Agreed service targets and acceptance criteria
 - TW invests in test load/monitoring applications and provides regular feedback
 - TW develops retry logic protocol layer
 - SafeNet invests in architecture refinements and additional cloud servers
- **Service now operational with TW customers**
 - Reliably manages concurrency of 6000 threads in 30 seconds
 - Dedicated AWS servers run a Towers Watson instance of Sentinel Cloud managed by SafeNet
 - Mutually beneficial service development partnership

Future challenges

- Fully integrated HASP/Cloud solution so all features available across both platforms
- Licensing deployment decision made at time of sale (workstation, data center, cloud)
- Some data centers refuse internet connectivity (cloud service unacceptable)
- Easy migration to a single management database and provisioning application (starting with Sentinel EMS)
- Enhanced reporting better supporting invoicing
- Better compatibility of licensing servers with data center / cloud VMs



Summary

- Sentinel HASP and Sentinel Cloud

- Now a business-critical enabler for the RCS software business and operating across many hundreds of the world's largest insurance companies

- SafeNet partnership

- Towers Watson has been a demanding user of SafeNet technology, often pushing against original technical limitations
- SafeNet have demonstrated they can rise to the challenge!
- A valuable partner ...