Opportunities in a Changing World

Innovation, Disruption, Connectivity: A new path on risk

Mark McLaughlin, Global Insurance Director | April 2018

Trust
Insurance industry: **43%**
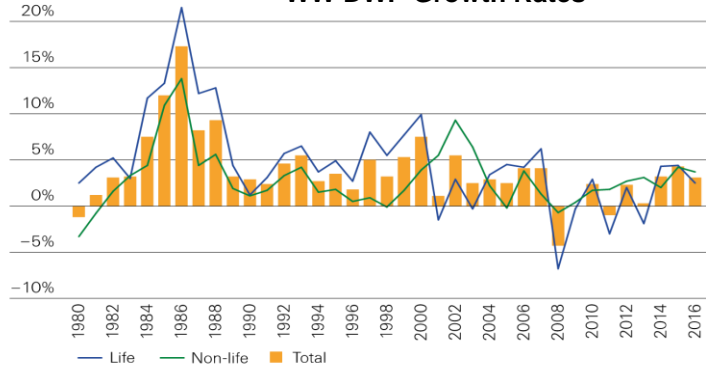Own insurance company: **37%**

Switched insurance provider in the past two years: **31.3 %**

We surveyed 22,000 consumers in 24 countries on their insurance relationships, value preferences and switching behavior

The industry is experiencing an intense set of pressures for change…

WW DWP Growth Rates

20%
15%
10%
5%
0%
−5%
−10%

1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016

— Life — Non-life ■ Total

3%

WW Average Growth Rates

Life Insurance Wallet Share of FSS

CAGR 2002-2012 Percent
CAGR 2012-2020E Percent

	2002	2007	2008	2009	2010	2011	2012	2017E	2020E
	72	108	97	108	116	120	129	181	221
Current accounts deposits	9	8	9	9	9	10	9	9	9
Cash	2	2	3	3	3	3	3	3	3
Pensions	18	20	18	19	19	19	19	18	18
Investments (retail)	28	35	30	31	31	30	31	37	38
Life insurance	16	15	15	15	15	14	13	12	
Non-current account deposits[1]	26	20	24	23	22	23	23	21	20

CAGR 2002-2012: Current accounts deposits 6, Cash 8, Pensions 7, Investments (retail) 7, Life insurance 5, Non-current account deposits 5
CAGR 2012-2020E: Current accounts deposits 6, Cash 6, Pensions 6, Investments (retail) 10, Life insurance 4, Non-current account deposits 5
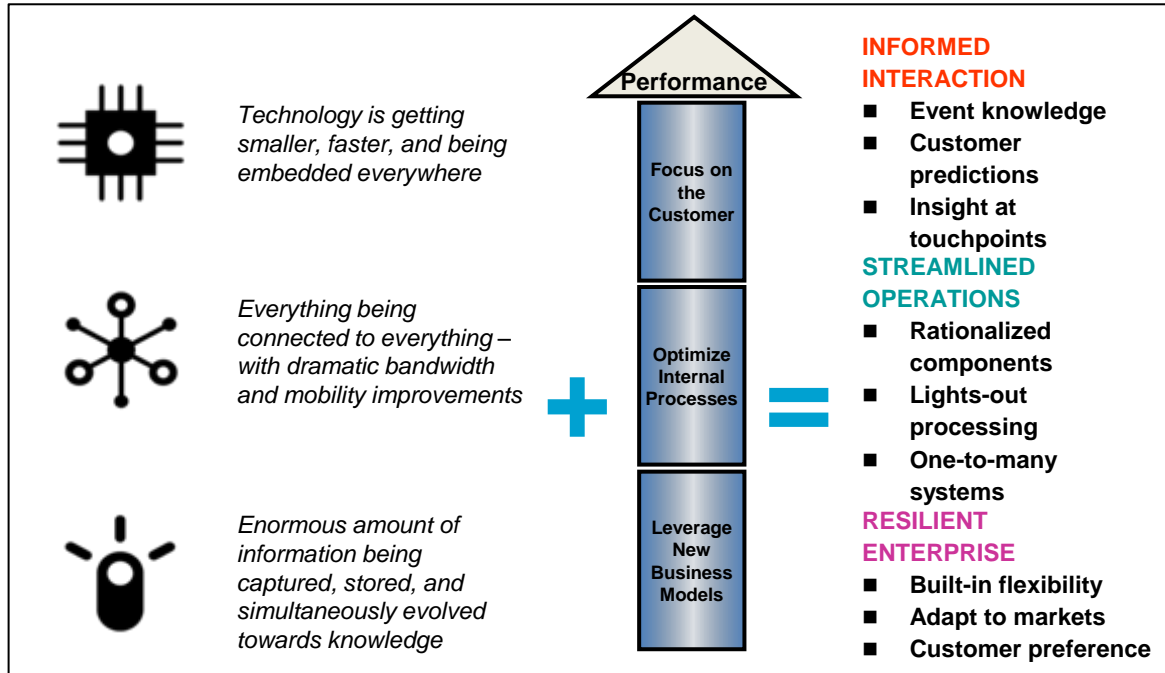
1 Includes savings, term and safety deposits

20%

Wallet Share Decline

- **Global Economy**: slow growth and low investment returns forcing diversification across geos and lines
- **Commoditization:** loss of pricing power as regulations, aggregation, and new channels, take hold

- **Customization:** new features, new functions, new products and structures
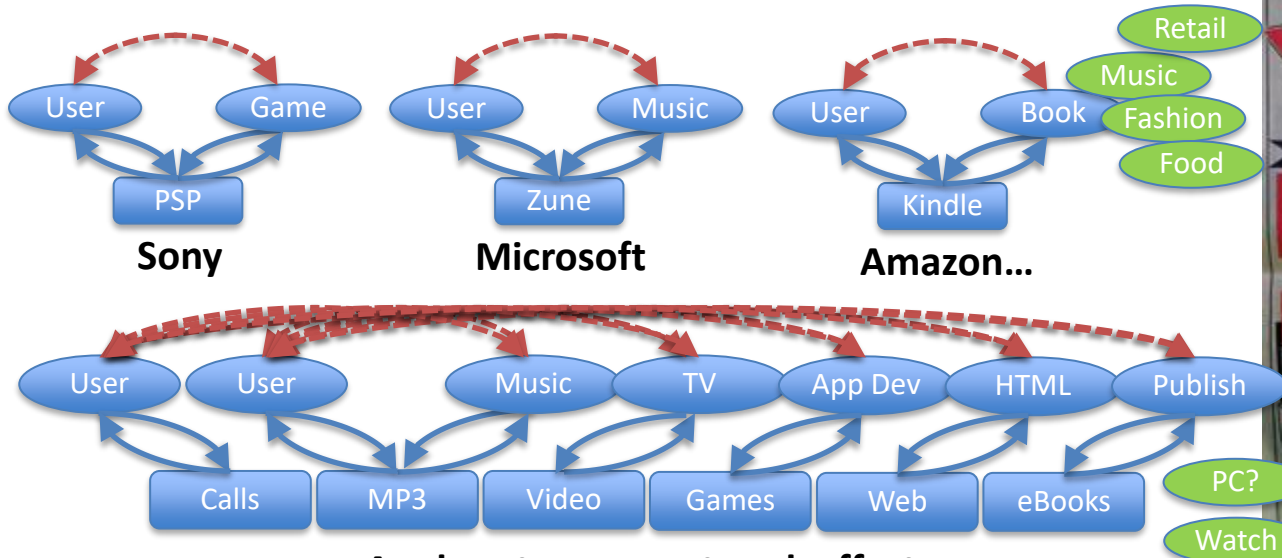- **Disintermediation**: empowered customers connect to others; insurers' distribution has limited reach

Source: Swiss Re 2016, McKinsey Global Insurance Pools 2016

…as usual. So what's different now?

Pressures for Change, 2010

Technology is getting smaller, faster, and being embedded everywhere

Everything being connected to everything – with dramatic bandwidth and mobility improvements

Enormous amount of information being captured, stored, and simultaneously evolved towards knowledge

Performance

Focus on the Customer

+

Optimize Internal Processes

=

Leverage New Business Models

INFORMED INTERACTION
- **Event knowledge**
- **Customer predictions**
- **Insight at touchpoints**

STREAMLINED OPERATIONS
- **Rationalized components**
- **Lights-out processing**
- **One-to-many systems**

RESILIENT ENTERPRISE
- **Built-in flexibility**
- **Adapt to markets**
- **Customer preference**

- **Focus on the Customer:** more prediction and customer data, reach empowered customers
- **Optimize Processes:** control costs, standardize
- **Leverage New Models:** customize products, go digital, expand horizon

Disruption by Ecosystem

Sony

Microsoft

Amazon...

User — Game — PSP

User — Music — Zune

User — Book — Kindle

Retail · Music · Fashion · Food

User · User · Music · TV · App Dev · HTML · Publish

Calls · MP3 · Video · Games · Web · eBooks

PC? · Watch

Apple : stronger network effects

– Start with one (new) "job to be done"

– Add new data / offer third party participation

– Take over industries / break value chains

Disruption Opportunities

Untapped niches
- Harvey: Houston +46%, flood cover -9%
- Sendai: Earthquake coverage rates ~ 14-17%
- Life insurance penetration variation 1-18%

Erosion risks for insurers
- Underlying risk erosion
- Channel evolution
- Information asymmetry
- Advice shortfall
- Alternative risk models (peer-to-peer, PAYD)
- Position at point of sale / point of risk
- Cultural issues
- Reputation

Technology Adoption Curves

Adoption Rates of Consumer Technologies in the US (9% to 91% penetration)
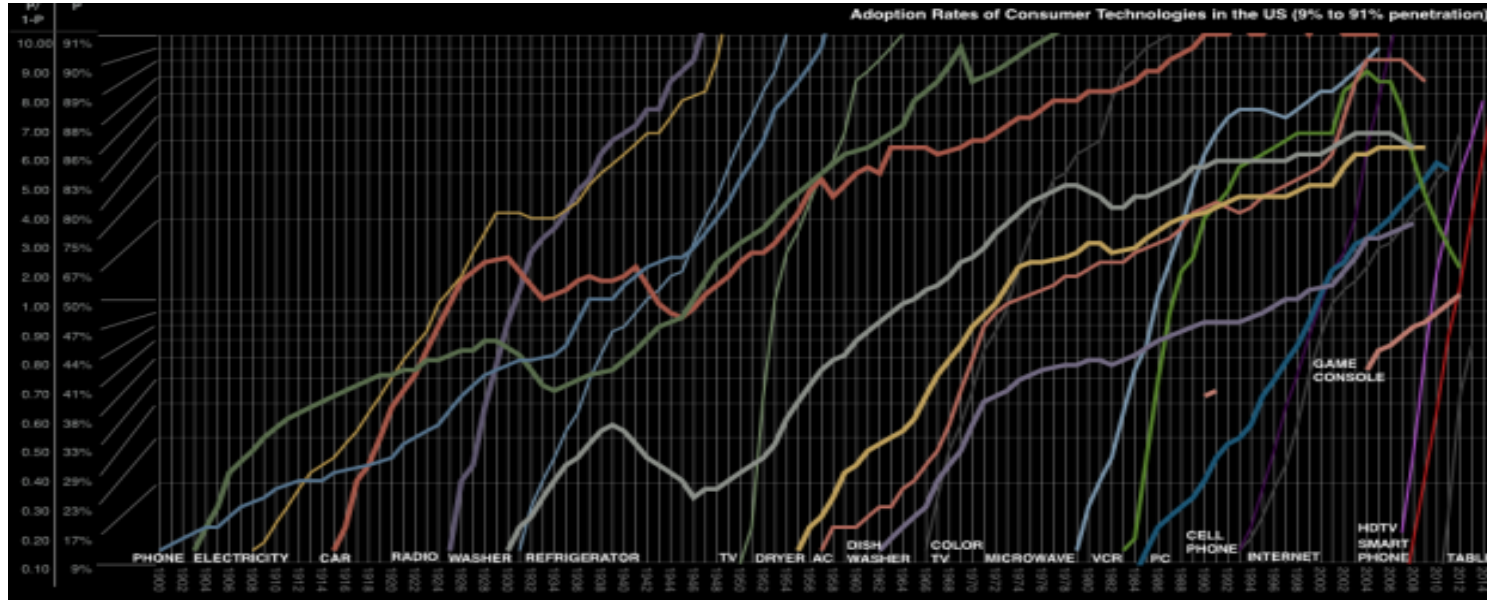
- Used to take 40 years to adopt a technology, now it takes 4
- When technologies get adopted, value chains can be adapted/broken/changed
- Makes it a primary disruptive opportunity / force

Source: asymco.com ,2016

Technology Adoption:

Recognize

Trendline:
Instrumentation → Recognition
Sense and Understand / Risk and Customer

Battleground:
Engage to Prevent Risk

Battle:
Owners of instruments: cable, telco, automotive, medical – adjacent risk models

vs.

Precision knowledge of risk -
→ precision pricing + offers

Invite continuous engagement / continuous underwriting / risk avoidance

Smaller risk pools – markets, pricing, social implications

Future:
- **Wearables**: always-recording, surveillance, wearable actuators
- **3D Print**: manufacturing of one, weapon development, supply chain shortening, self-replication issues
- **Genome**: precision underwriting, precision medical, risk sharing issues

Tomorrow:
- **Drone**: remote sensing, delivery
- **Wireless**: cheap, ubiquitous network availability for sensors

Today:
- RFID
- IoT / Telematics
- GPS

Technology Adoption:

Assist

Trendline:
Interconnectedness → Assistance
Connect Stakeholders / Insight and Value

Battleground:
Point-of-Risk Systems

Battle:
Supply chain disintermediators — telcos, mobile OEMs, social, wearables manufactures e.g. Snap, aggregators

vs.

Tailored products and services at time risk is considered

Formless applications

Transaction embedding

Insuring Industry 4.0

Today:
- Mobile
- Social

Tomorrow:
- **Blockchain:** Shared Ledger, Privacy, Trust, Smart Contract — distributed value chains
- **Shared economy:** access vs. ownership vs. incentives
- **Electronic Payments:** restructured transactions

Future:
- **API Economy:** industry ecosystems, composable consumer services
- **Biometrics:** improved security, end of passwords, rise of trusted contracts
- **Automated Driving:** delivery, sales, dispatch, risk patterns all upended

Technology Adoption:

Insight

Trendline:
Intelligence --> Insight
Interpret New Data / New Risk Value

Battleground:
Adaptive Advice

Battle:

Streamlined advisors — messaging apps, warranty insurers, roboadvisors

vs.

Quality advisors: Vertically integrated risk management products and services

Custom advice and products differentiated by deep risk knowledge and tailored explanations

Future:
- **AR:** risk management and recommendations for risk avoidance, advice, simulation, recommendation
- **Cognitive Process Adaptation:** regulatory oversight integration, product sufficiency, reallocation of humans, trends analysis, activity-based-costing

Tomorrow:
- **Interpretation:** Voice recognition, accents, tone, languages, video, personality, emotional affect
- **RPA:** process automation, robotics

Today:
- Analytics
- Big Data

New Potential Models and Metrics for Insurers

Cognitive Tech

Insurance industry's "competitive moats"

- Knowledge of risk
- Longevity and trust
- Deep asset base, long view
- Regulatory knowledge

Recognize

Assist

Insight

Innovation Model Evaluation

- Adjacency to insurer market strategy
- Potential market reach – greenfield
- Return on Information – portfolio
- Customer interactions – ½ are <1 year
- Adjacency to point of risk
- Go-to-Market speed

What capabilities do you need to build to do all this?

Scalable and Secure	Flexible	Customer Insight	Deep Engagement	Wide Engagement
Cut Costs - cloud, as-a-service models, process automation, security	Utility, platform: able to consume core insurance as-a-service; flexible platform to handle new products; consolidation across geos/lines	Data harvesting, wide collection, analytics, personality, custom communication and campaigns, automatic interactions	More frequent, richer, more informed, more local, mobile, cognitive to build precise advice, pricing, and products	Insurance as API, Blockchain, smart electronic interchange; insurance connected to other industries; other value chains ingested into insurance

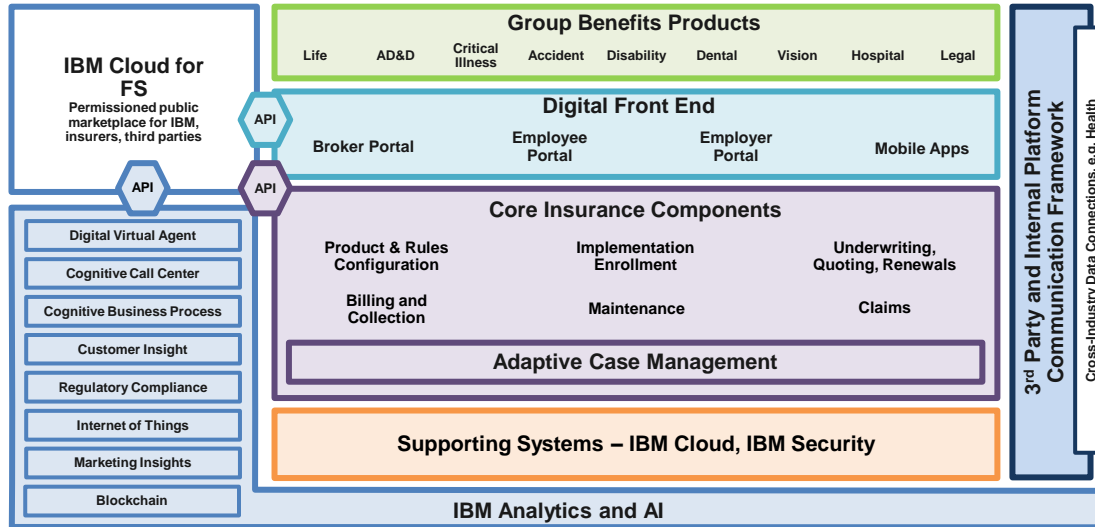# Cloud-based "IT-as-a-Service" Transformation Approach

1 Deliver a significant Return-on-Investment

2 Provide service quantity and price variability that enables business agility, and

3 Support Business Continuity and Resiliency

Cost

Variability
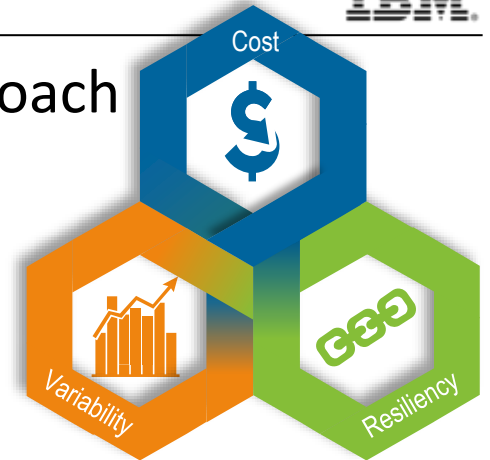
Resiliency

- **Mainframe aaS:** Mainframe (MIP variable pricing including hardware, IBM software, support)
- **Compute aaS:** Appx 5000 images to PureFlex resilient private cloud
- **Storage aaS:** Tiered per GB pricing (7+ Pb)
- **Backup aaS:** Per GB including hardware, support
- **Database aaS:** Pricing based on Compute and Storage as a Service
- **IIS/.Net aaS:** Per Instance rate for all inclusive IIS/>net instance support

- **Java aaS:** Per instance pricing
- **Service Desk:** desk services, support, chat
- **Enterprise Application Services:** 50+ applications
- **VDI aaS:** Per seat pricing, additional business continuity scope
- **Office Automation aaS:** Support for Lync, SharePoint and Exchange apps, OS
- **Service Management aaS:** Support for Remedy and other service management products

IBM Insurance Industry Platform: Insurance-as-a-Service

IBM Cloud for FS
Permissioned public marketplace for IBM, insurers, third parties

API

Group Benefits Products

| Life | AD&D | Critical Illness | Accident | Disability | Dental | Vision | Hospital | Legal |

Digital Front End

Broker Portal

Employee Portal

Employer Portal

Mobile Apps

API

Core Insurance Components

Product & Rules Configuration

Implementation Enrollment

Underwriting, Quoting, Renewals

Billing and Collection

Maintenance

Claims

Adaptive Case Management

Digital Virtual Agent

Cognitive Call Center

Cognitive Business Process

Customer Insight

Regulatory Compliance

Internet of Things

Marketing Insights

Blockchain

Supporting Systems – IBM Cloud, IBM Security

IBM Analytics and AI

3rd Party and Internal Platform Communication Framework

Cross-Industry Data Connections, e.g. Health

- First SaaS back office processing platform in market

- Changes how insurers sell, underwrite, quote, service and maintain insurance on a new and disruptive platform

- Flexible to accept range of products and custom front-end experience for end users

- Scalable with business needs

- Started with NA Group Benefits

eCall4All - IBM and Bosch Complete the IoT Value Chain

IBM. ⊕ BOSCH

- Telematics to reduce deaths and claims via accidents
- Global service for retrofit

Insurer
- First contact in emergencies
- Faster claims response
- Preferred suppliers to fix
- Manage body injury and property damage quickly

Policyholder – Peace of Mind
- Immediate access to emergency services
- Automated crash response
- Severe weather conditions, crisis warnings, roadside assistance

Scope of Transformation:
- Industry Integration: Easily push and pull data from leading industry solutions
- Built on Open Standards and Device neutral
- IoT specific security: Security micro-services built specifically for IoT -based solutions
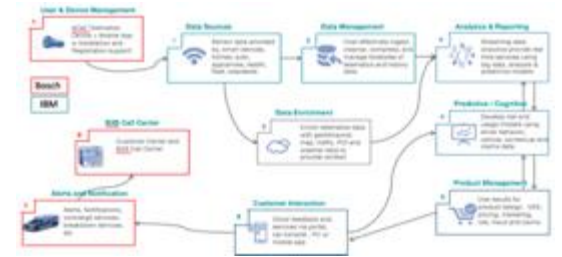
Improving the claims process:

Accident Reporting	Liability Analysis	Reduce Fraud	Get the Full Story	Service Providers
• Guarantees that losses are reported the second they happen, not just within the "accident reporting window."	• Gives claims managers the opportunity to obtain incident information while it's still fresh in the driver's minds	• [1]Auto insurance is the greatest component of overall insurance fraud. The cost of fraudulent claims is approximately $80 billion annually.	• It's easier to preserve evidence and potential testimony while all involved parties are still on the scene.	• [2]Studies show that auto insurance providers can save as much as 30% on claims by controlling the service provider network.

Device plugs into vehicle's 12v outlet

Device connects to smartphone via Bluetooth

Driver downloads eCall app from Google Play Store Apple App Store

When device detects a collision, crash data and user information is sent to the smartphone app via Bluetooth

Emergency services or roadside assistance can be dispatched based on severity

Amica Mutual Insurance Claims Transformation / Mobile Enablement

Insurer
Enhance Customer Experience
- Decrease Cycle Time
- Personalize Interactions
- Increase Transparency, Trust

Increase Adjuster Productivity
- Higher Claims Capacity
- Lower Adjustment Costs, Time at Desk, Training Time
- Consolidation: Six internal systems into single mobile tool

Policyholder
- Precise scheduling, STP without missing documentation
- Decreased initial payment time
- Increased settlement accuracy

Scope of Transformation:
- Maximizes field-based adjuster time
- View assigned claims (map or calendar)
- Take notes, record audio, capture photos
- Access customer policy information
- View FNOL, claim history, and documents
- Visualize historical data from Weather.com
- Fully customizable for individual clients

IBM.
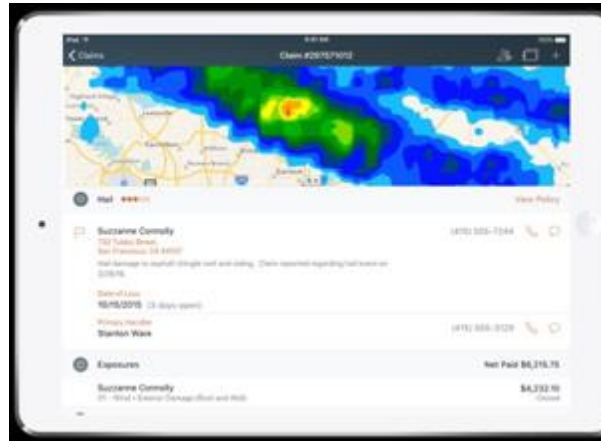
AIG Multinational Blockchain Initiative with Standard Chartered Bank

AIG   IBM.   Standard Chartered

Objective:

- **AIG** was looking to issue & record a multinational umbrella policy on Blockchain to improve transparency, efficiency, and servicing
- AIG and client **Standard Chartered Bank** created a Blockchain business network for Directors & Officers (D&O)

Benefits:

- Removes friction and administrative burden, and increases transparency

Scope of Transformation:

- Minimum Viable Business Network to provide full transparency around "Master" & "Local" Policies, associated premiums & payments, and Policy Issuance
- The project converted a controlled D&O master policy (UK), and three local underliers (Kenya, US, Singapore)
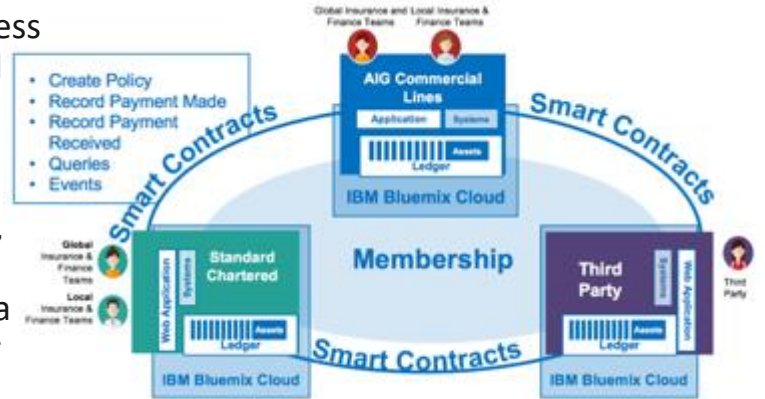
Multinational Policy Lifecycle:
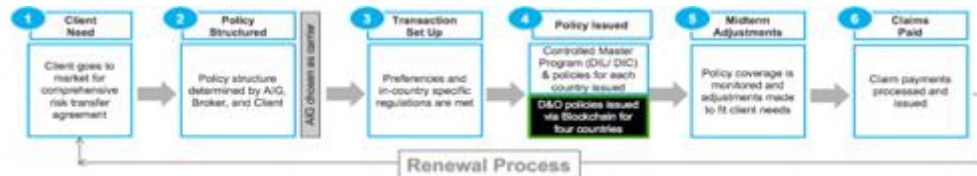
Why Blockchain:

- Efficiencies during policy issuance across geo and organizational borders
- Blockchain improved contract certainty, compliance, and country alignment
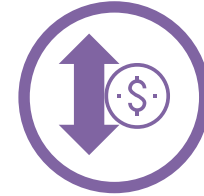
Industry Platforms offer insurers efficiency and differentiation

As-a-Service Model
Lower start costs,
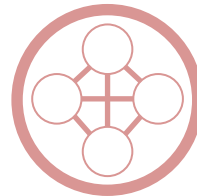*lower operations TCO*

Key Advantages

Scalability
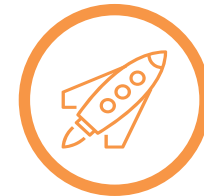*Technical capacity,*
business flexibility

CapEx → OpEx
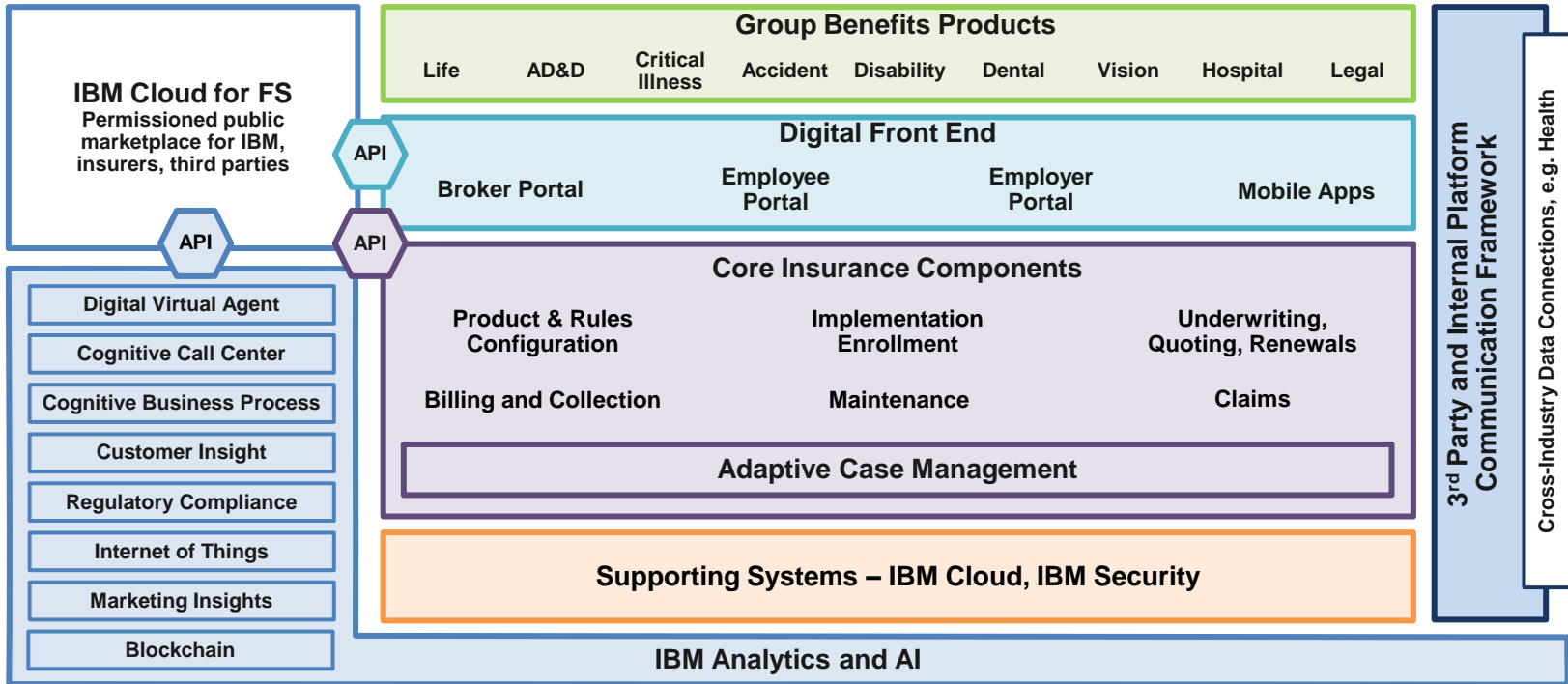*Removes substantial fixed costs*

Multi-Party
Enables ecosystem joint value, shared data

Customization
Unique experiences via composable business services

The IBM Insurance Platform delivers transformative digital experiences atop efficient core operations – shown here for the NA Group Benefits market


IBM Cloud for FS
Permissioned public marketplace for IBM, insurers, third parties

API **API** **API**

Group Benefits Products

| Life | AD&D | Critical Illness | Accident | Disability | Dental | Vision | Hospital | Legal |

Digital Front End

Broker Portal   Employee Portal   Employer Portal   Mobile Apps

Core Insurance Components

Product & Rules Configuration   Implementation Enrollment   Underwriting, Quoting, Renewals

Billing and Collection   Maintenance   Claims

Adaptive Case Management

Supporting Systems – IBM Cloud, IBM Security

IBM Analytics and AI

- Digital Virtual Agent
- Cognitive Call Center
- Cognitive Business Process
- Customer Insight
- Regulatory Compliance
- Internet of Things
- Marketing Insights
- Blockchain

3rd Party and Internal Platform Communication Framework

Cross-Industry Data Connections, e.g. Health

Summary and Benefits of Blockchain for Business

Append-only distributed system of record shared across business network

Shared ledger

Smart contract

Business terms embedded in transaction database & executed with transactions

Ensuring appropriate visibility; transactions are secure, authenticated & verifiable
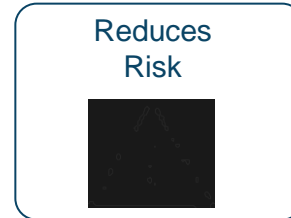
Privacy

Consensus
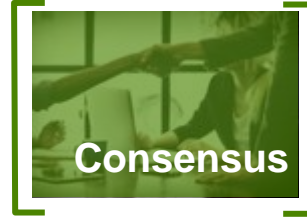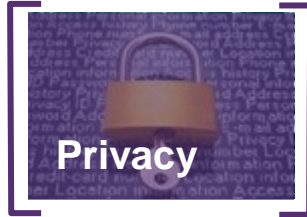
All parties agree to network verified transaction

Reduces Time

Removes Cost

Reduces Risk

Enables New Business Models

Transaction time from days to near instantaneous
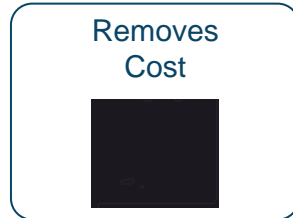
Overheads and cost intermediaries

Tampering, fraud & cyber crime

IoT Integration into supply chain

MAERSK

Improving in-transit inventory management

Real-time tracking shipment of goods across multiple global supply chain checkpoints

Digitizing the end-to-end supply chain process to increase transparency and security among all trading partners, reduce fraud and errors, decrease product time spent in the transit, and lower waste and cost.
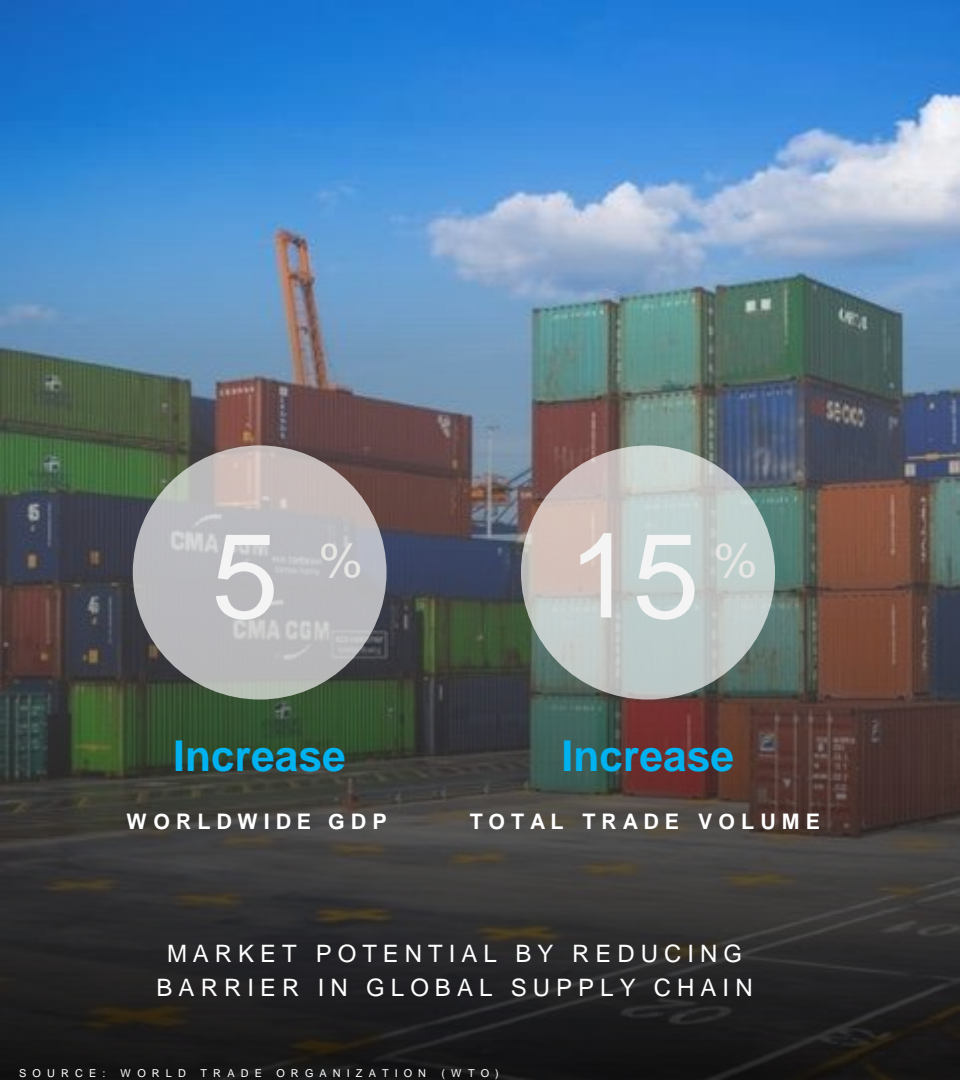
5 %

Increase

WORLDWIDE GDP

15 %

Increase

TOTAL TRADE VOLUME

MARKET POTENTIAL BY REDUCING BARRIER IN GLOBAL SUPPLY CHAIN

SOURCE: WORLD TRADE ORGANIZATION (WTO)

Case Study: Cross Border Supply Chain

What?

- **Ninety percent** of goods in global trade are carried by the ocean shipping industry each year. Costs associated with trade documentation processing and administratio are estimated to be up to **one-fifth** the actual physical transportation costs.

How?

- A new Blockchain solution from IBM and Maersk will help manage and track the paper trail of tens of millions of shipping containers across the world by digitizing the supply chain process.

Benefits

- Enhance transparency and the highly secure sharing of information among trading partners and customs officials.

- Reduce fraud and errors, reduce the time products spend in the transit and shipping process, improve inventory management and ultimately reduce waste.

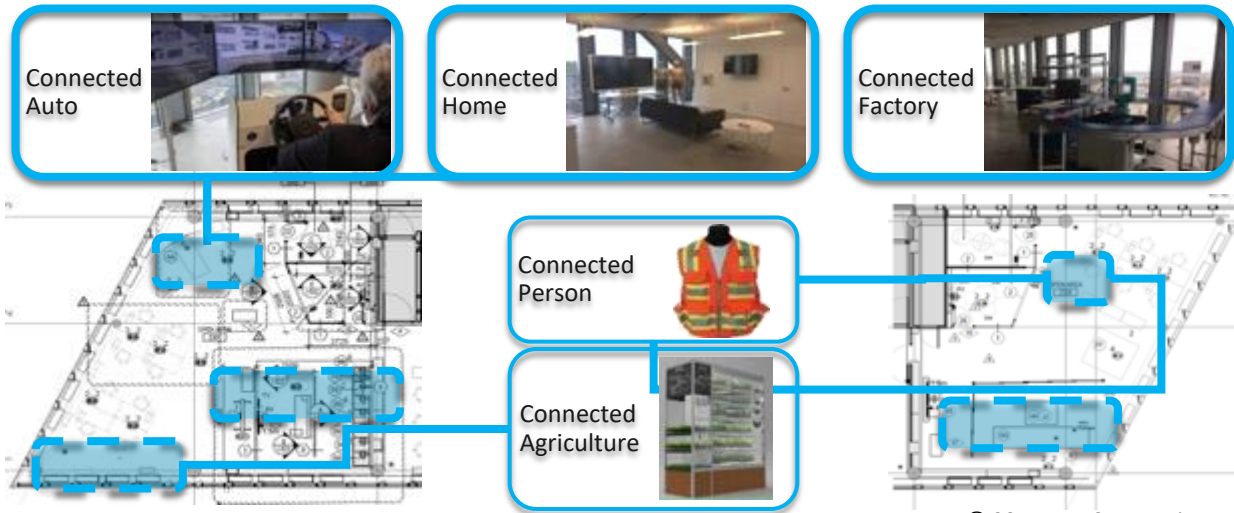- Potential to save the industry billions of dollars.

Ways to Get Started

Connect Platforms and Blockchain with fast prototyping

Garages can rally resources devoted to relevant technologies

Prototype Labs to empower business users to design quickly

Design Thinking to consider art of the possible

Connected Auto

Connected Home

Connected Factory

Connected Person

Connected Agriculture