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IBM's Business, Data and IP Strategies in the era of AI and Cloud

Mark Ringes
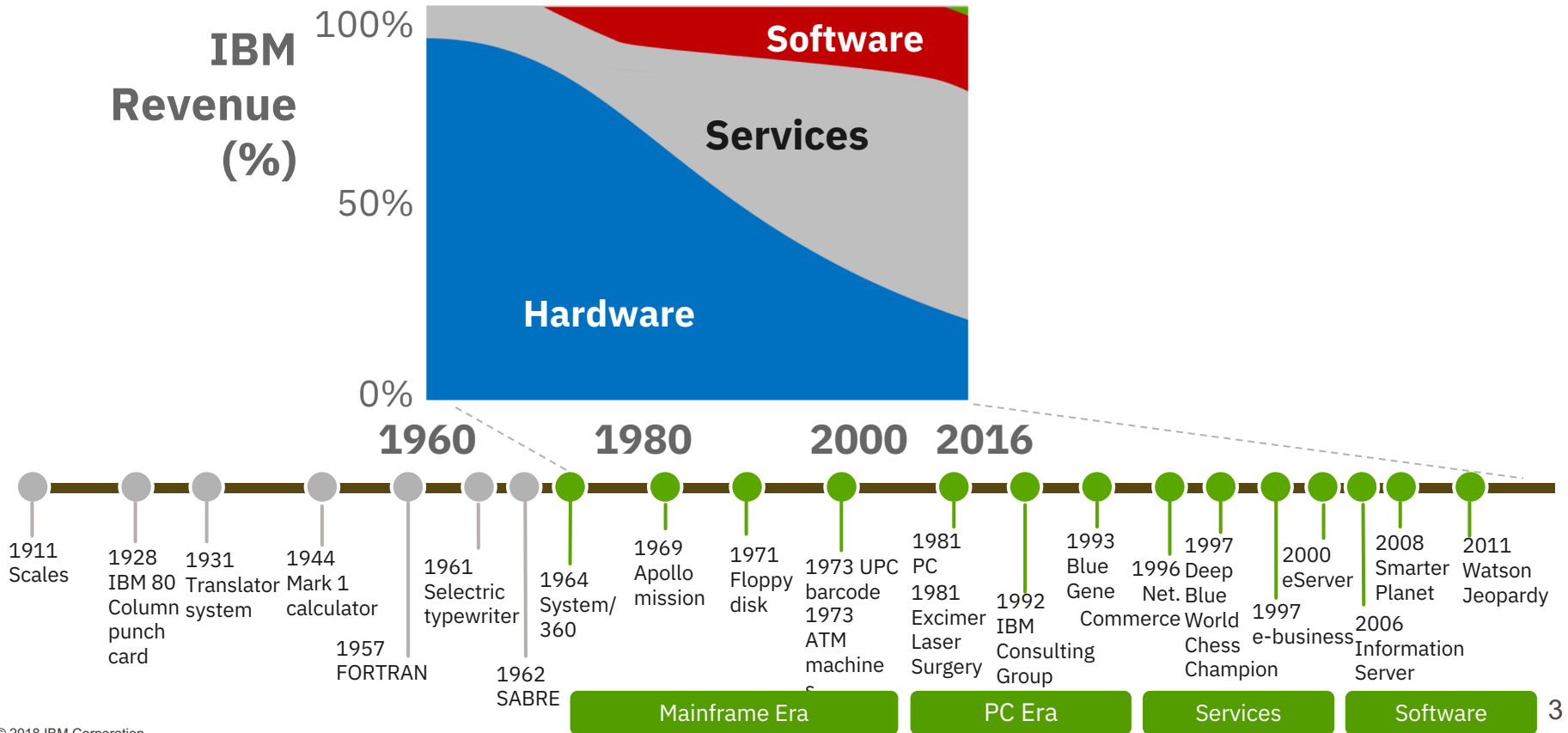### Vice President, Assistant General Counsel, IP Law, IBM Corporation
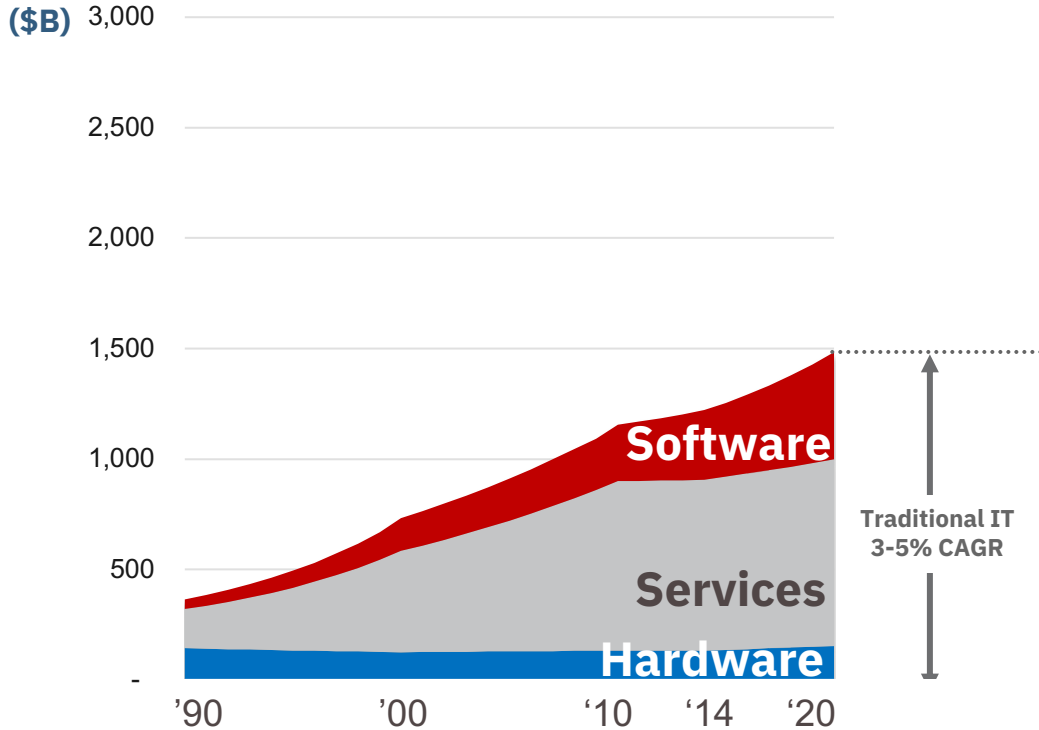
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2017 Annual Report

Today's IBM: Built for smarter businesses

- Inflection points
  - *This is not just an inflection point for IBM. It is also an inflection point for our clients—the enterprises and institutions of the world.*

- IBM patent leadership is building the future for smarter businesses
  - *IBMers received a record-breaking 9,043 U.S. patents during 2017—the 25th consecutive year that the company has led the world.*
  - *Even more important, nearly half of IBM's new patents are advancing AI, cloud computing, blockchain, quantum computing, cybersecurity and other technologies that will change the way the world works—again.*
- IBM is an enterprise technology company.

# IBM has transformed - *re-platformed* - 4 times in the last 50 years

IBM Revenue (%)

100%

50%

0%

Software

Services

Hardware

1960

1980

2000

2016

1911 Scales

1928 IBM 80 Column punch card

1931 Translator system

1944 Mark 1 calculator

1957 FORTRAN

1961 Selectric typewriter

1962 SABRE

1964 System/360

1969 Apollo mission

1971 Floppy disk

1973 UPC barcode
1973 ATM machines

1981 PC
1981 Excimer Laser Surgery

1992 IBM Consulting Group

1993 Blue Gene Commerce

1996 Net.

1997 Deep Blue World Chess Champion

1997 e-business

2000 eServer

2006 Information Server

2008 Smarter Planet

2011 Watson Jeopardy

Mainframe Era

PC Era

Services

Software

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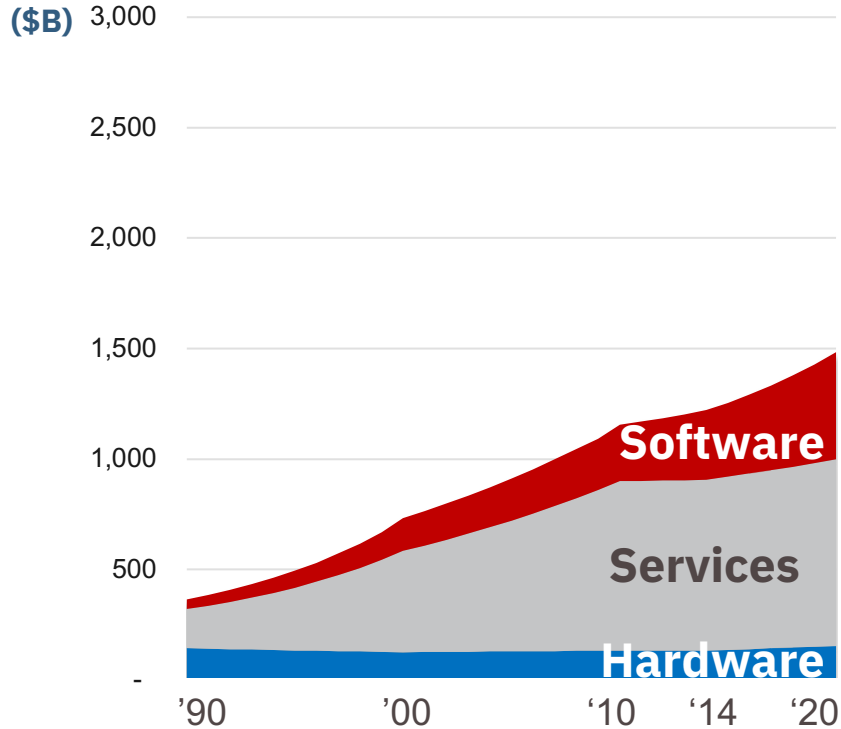# The traditional IT industry is re-platforming

($B)

Sources: '15-'16 Public Analytics estimates, IBM Market Development & Insights; IDC, Forrester, Gartner, McKinsey, Investment Bank Research, Company Reports

Cloud platforms becoming 65% of IT market by 2020

On-Premises IT

Hybrid

Public Cloud

Private Cloud
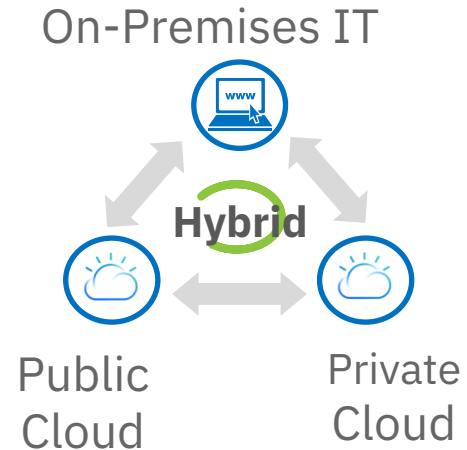
New technologies are remaking the industry

($B)

3,000
2,500
2,000
1,500
1,000
500
-

Software
Services
Hardware

'90   '00   '10 '14 '20

Sources: '15-'16 Public Analytics estimates, IBM Market Development & Insights; IDC, Forrester, Gartner, McKinsey, Investment Bank Research, Company Reports

1. Pervasive Cloud

2. AI Everywhere

3. Smart Security

4. Intelligence of Things (IoT)

5. Blockchain

"Next" Horizons
Edge Computing
Quantum Computing
Personalization @ scale
Next gen: Man-Machine

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Giving rise to new markets – and new platforms

($B)

Cognitive Solutions

Expansion of Traditional IT Market

New Markets 25% CAGR

Software

Services

Hardware

'90   '00   '10   '14   '20

Sources: '15-'16 Public Analytics estimates, IBM Market Development & Insights; IDC, Forrester, Gartner, McKinsey, Investment Bank Research, Company Reports
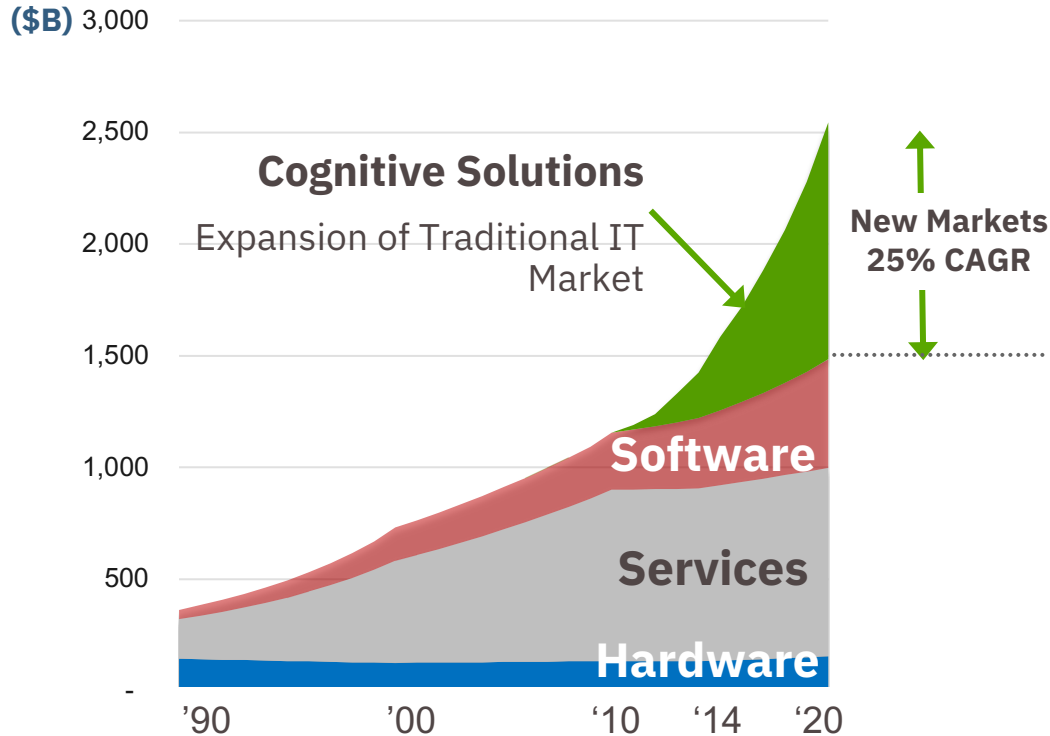
A new form of competition: Cognitive Solutions, fueled by AI platforms.

75% of developers **to embed cognitive** into apps thru '18 - IDC

Industry-focused cognitive/AI **top investment** by '20 - IDC

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IBM's Next era
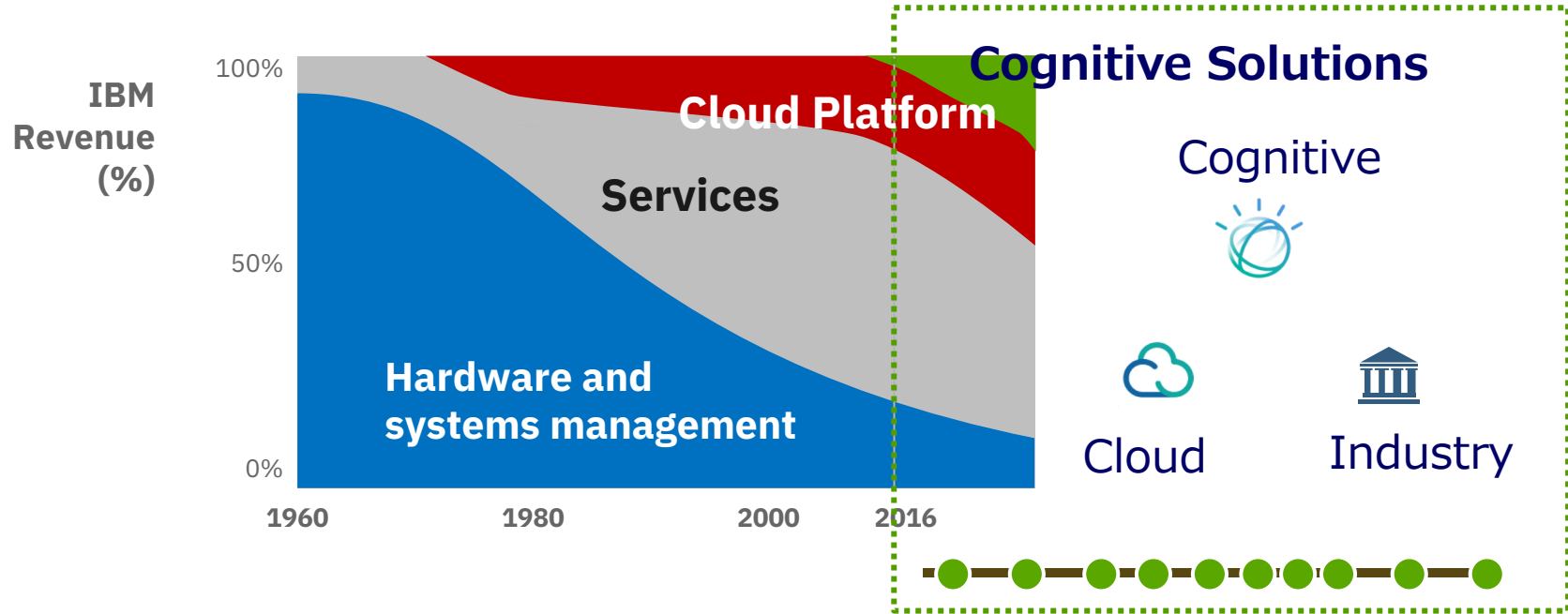
50% of IBM Revenue shifting to Cloud and cognitive solutions

Bringing together innovative technology and industry expertise

Cloud ☁

- Public Cloud getting more important
- Enterprise & consumer cloud very different

Traditional IT Market ($T)

	On-Premises	Private Cloud	Public Cloud	Hybrid
2017	56%	24%	20%	
2020	38%	28%	34%	
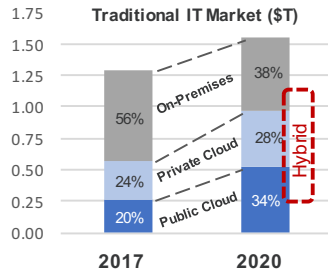
- For ALL your data (Hybrid)
- AI-ready
- Secure to the core

Cognitive

- From PoC to enterprise transformation
- Enterprise & consumer AI very different
- Enterprise applications fueled by expert data

- Industry and domain specific training
- Protection of client's data and insights

Industry 🏛

- Industry focused, high value cognitive solutions, integrated with business data

Industry Day
BIG DATA AND PHYSICS
BITS TO KNOWLEDGE

- Integration of values
  - Products and services
  - Technology skills and industry skills
  - Innovation and implementation

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IBM IP Leadership

- 25 consecutive years of US patent leadership

- ~$1B annual IP income

- Among most valuable brands worldwide

- Global IP policy leader

- Worldwide, world-class technical and IP community

- ~$6B annual investment in R&D

IBM's IP Strategy

Deliver to our shareholders a superior return on their investments in innovation and intellectual property

1. <u>Provide</u> *Freedom of Action* for IBM to innovate

2. <u>Integrate</u> IP into IBM's businesses with a balance of unique value, standards, and collaborative innovation

3. <u>Deliver</u> IP value

4. <u>Influence</u> IP legislation and regimes

> **Patent leadership**
> **Patent licensing**
> **Anti-NPE efforts**

> **Business-based IP strategies**

> **IP value from:**
> **Innovation, Income, and Influence**

> **IP regime maturity for business value and protection**

Data – New Business/IP Strategies in Cognitive Era

New Data Business Imperatives derive from
1) Business Strategy   2) Client Engagements
3) Access to Data   4) Rights to 'Internet' Data

Big Data and Analytics

IBM IMS

Unique business value from analytics tools applied to data

Managed Data Services

Algorithmics *an IBM Company*

IBM OpenPages

IBM Guardium

Disruptive shift in data and information management

Essential in the flow of enterprise data

Data Aggregation and Access

Core metrics An IBM Company

U unica An IBM Company

Access to enterprise data

Rights to data and metadata are essential

Data Security and Privacy

IBM InfoSphere

IBM Anonymous Resolution

Increased need for trusted information, and data and information governance

Research and development of anonymization services
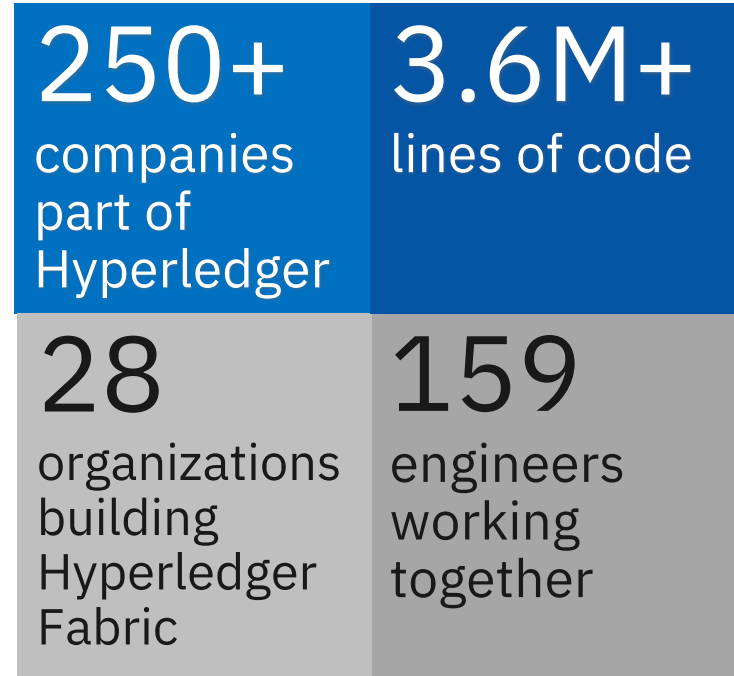
Blockchain and Hyperledger

Hyperledger: building open source blockchain for business

Hyperledger Fabric driving innovation

Collaboration that's driving business results

HYPERLEDGER

THE **LINUX** FOUNDATION PROJECTS

250+ companies part of Hyperledger	**3.6M+** lines of code
28 organizations building Hyperledger Fabric	**159** engineers working together

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Blockchain Use case in the Global Trade

TODAY	FUTURE
Inefficient paper-based and manual processes, Costly, Vulnerable	Transparent, Provenance management, Tamper-proof, Consensus, Finality
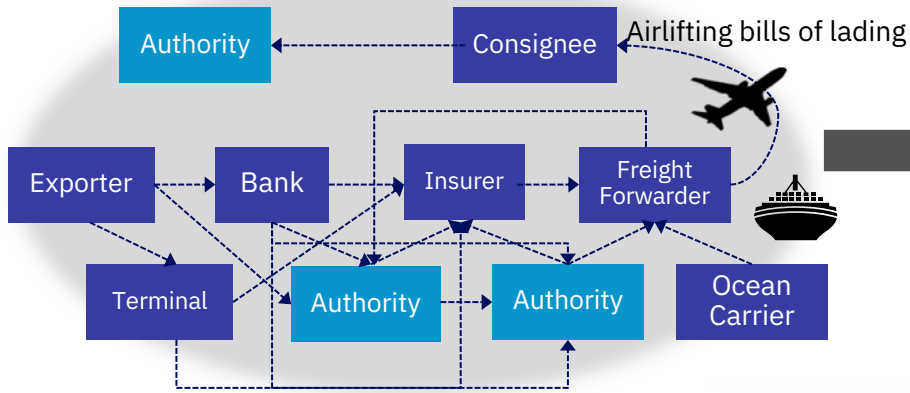
TODAY:
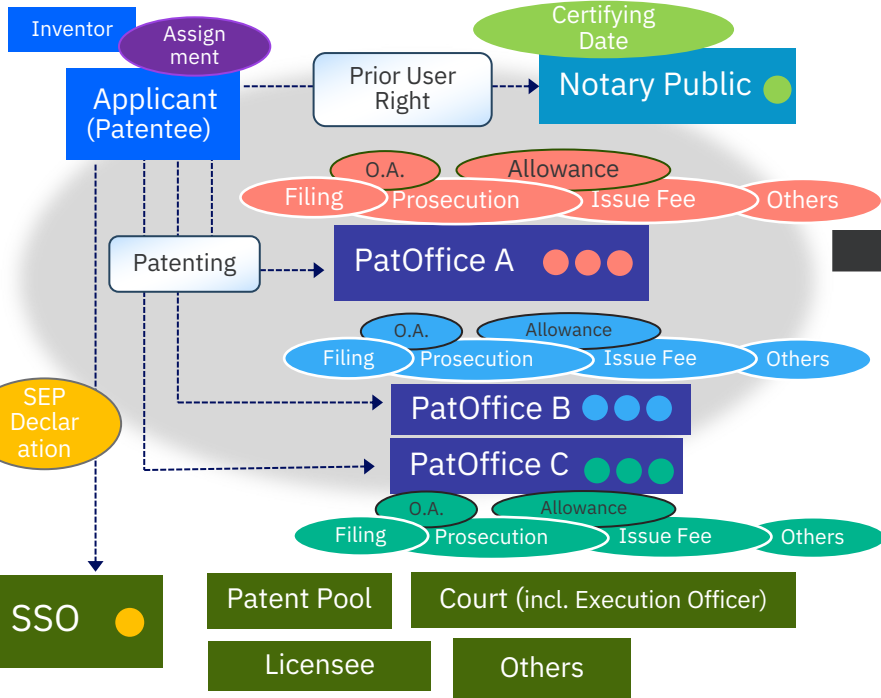Airlifting bills of lading
Authority, Consignee, Exporter, Bank, Insurer, Freight Forwarder, Terminal, Authority, Authority, Ocean Carrier

FUTURE:
Global Trade Digitization
Exporter, Bank, Insurer, Freight Forwarder, Consignee, Terminal, Authority, Authority, Carrier
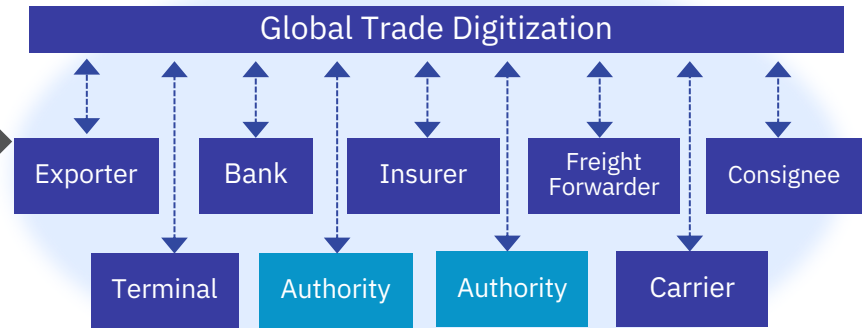
Paperless and visualized trade processing
Significantly reduces the costs and lead time
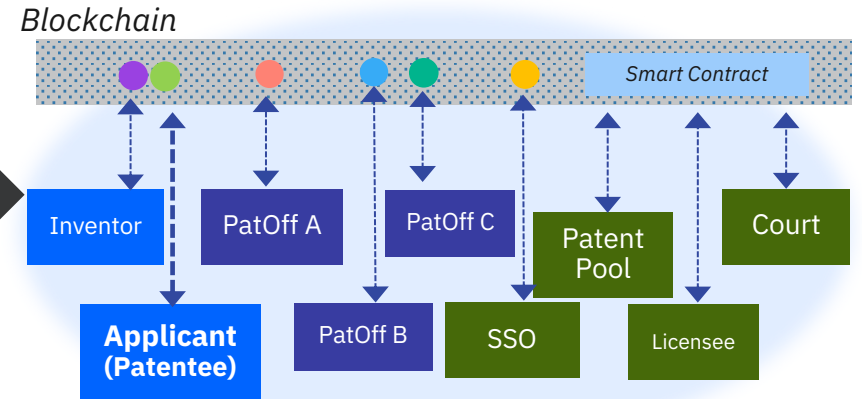for the global trade

Blockchain use for recording IP Life Log