

Economics of Fostering Innovation and Open Standards in Payment Markets

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Payment Markets

“The Federal Reserve believes that the U.S. payment system is at a critical juncture in its evolution. Technology is rapidly changing many elements that support the payment process. High-speed data networks are becoming ubiquitous, computing devices are becoming more sophisticated and mobile, and information is increasingly processed in real time.”

In Strategy #4: “Develop an implementation strategy for the application of the ISO 20022 standard to U.S. payment transactions.”

Strategies for Improving the U.S. Payment System, January 26, 2015,
Federal Reserve System.

Payment Markets

- **Technology standards**

Key to efficient operation of payment markets

Access by both banks and new market entrants is desirable

- **Patents and Standard Essential Patents (SEPs)**

Key to dynamic efficiency in payment markets

Fundamental for fostering invention and innovation

SEPs should not be a concern

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Technology standards

- increase effectiveness of payment systems
- improve safety and security of payment systems
- essential for industry coordination
- stimulate competition and innovation
- promote diffusion of new technologies

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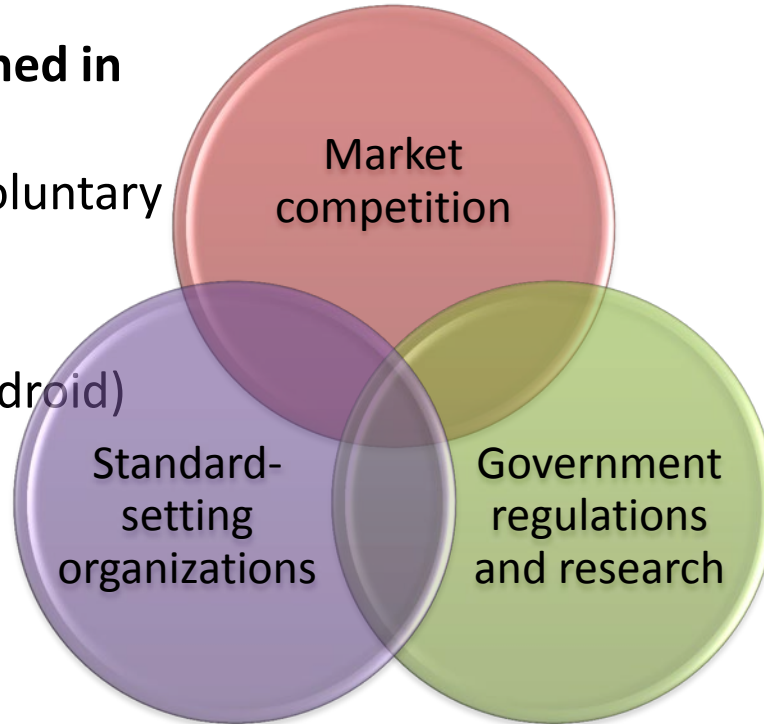
Technology standards – general policy propositions

- Antitrust and other public policy makers should not restrict the operation of private SSOs
- Should not restrict Intellectual Property
- Need for effective coordination between market participants, standard setting organizations, and government regulators

Innovation Economics

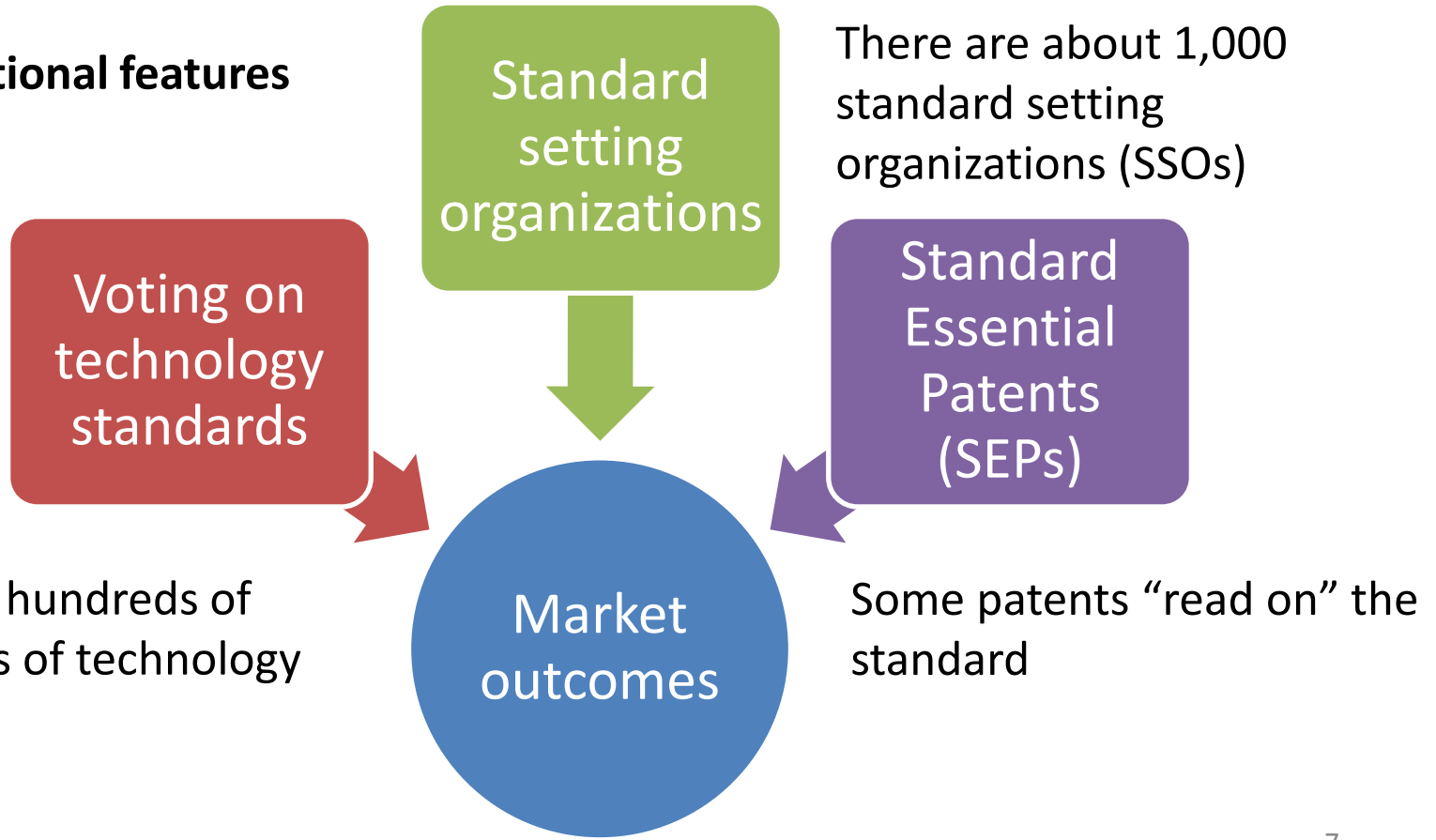
Technology standards are established in three connected ways

- **SSOs and industry consortia:** voluntary private organizations
- **Market competition**
Dominant technologies (e.g. Android)
Competition within standards
“Standards wars”
- **Government regulations, legal statutes, and research**



Innovation Economics

Key institutional features





Technology standards

ISO 20022

“A single standardisation approach (methodology, process, repository) to be used by all financial standards initiatives.”

https://www.iso20022.org/about_iso20022.page



Technology standards

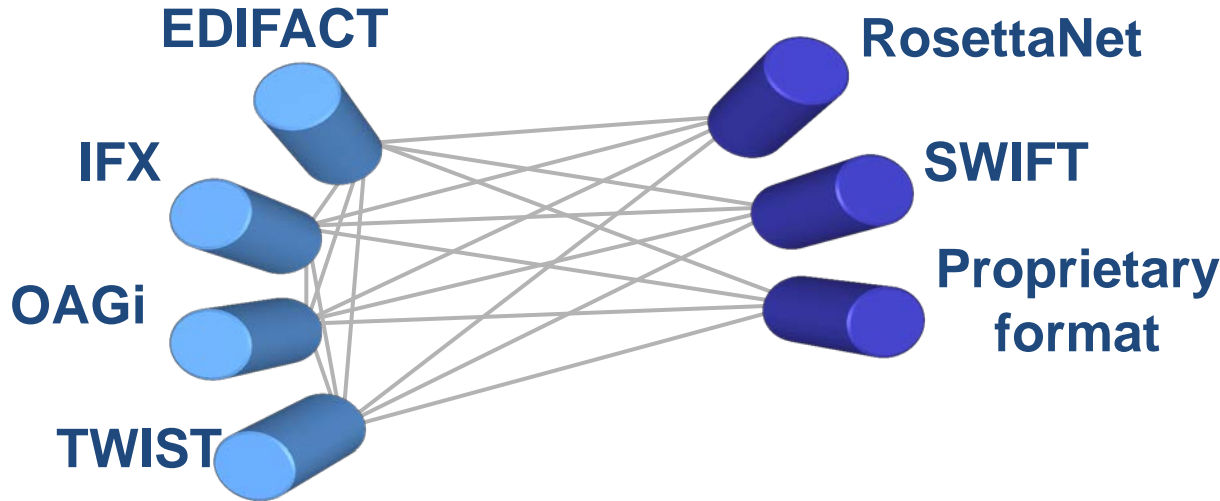
ISO 20022

5 Business domain catalogues

- Payments
- Securities
- Trade services
- Cards
- FX

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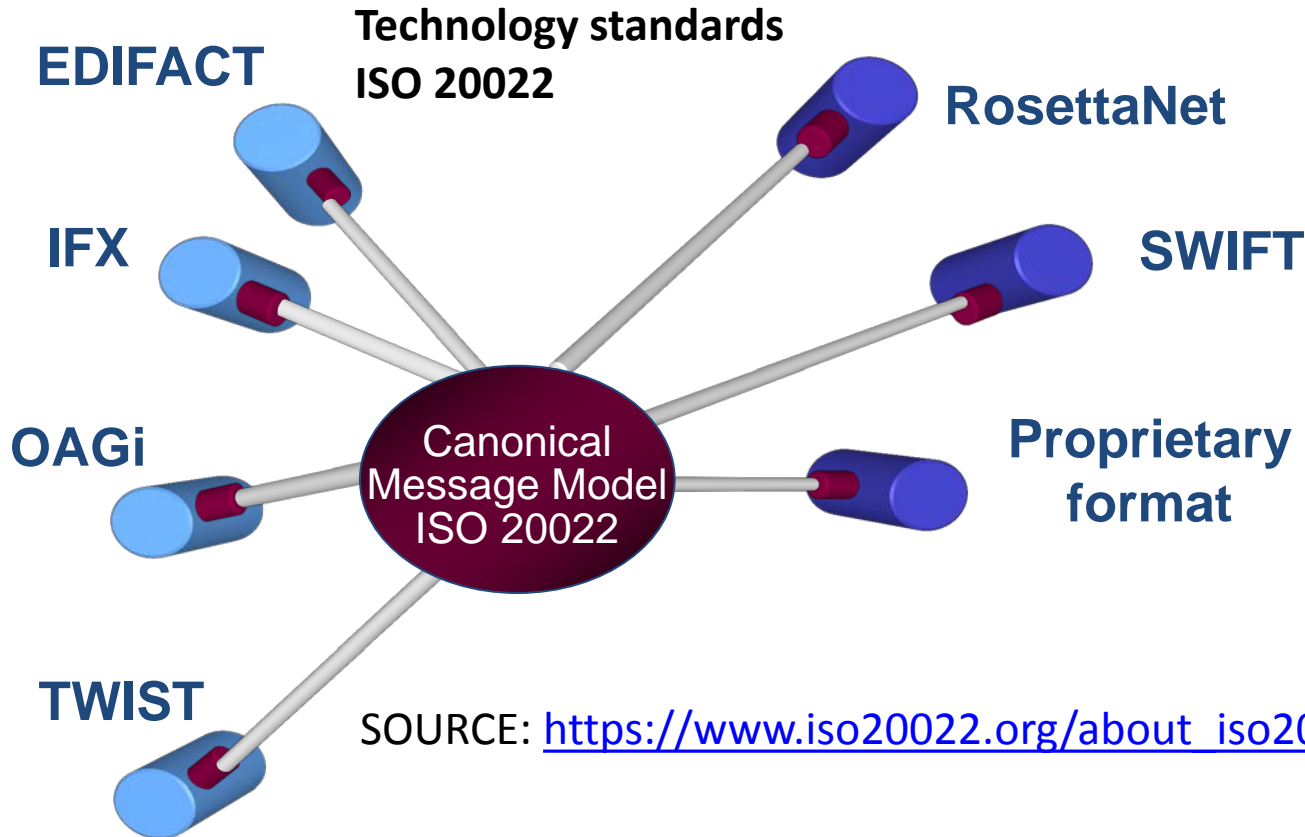
Technology standards
ISO 20022



Network effects
“Point to point”
transactions
Less
coordination

SOURCE: https://www.iso20022.org/about_iso20022.page

Payment Markets



Network effects
“Hub-and-spoke”
transactions
Coordination of
standards
More efficient

SOURCE: https://www.iso20022.org/about_iso20022.page

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Technology standards

ISO 20022 coordinates:

- **EDIFACT** (ISO 9735) – international standard for electronic data interchange (EDI).
- **IFX** Financial industry standard
- **OAGi** The Open Applications Group – open standards development organization
- **TWIST** Transaction Workflow Innovation Standards Team –industry standards group

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Technology standards

ISO 2022 coordinates:

- **RosettaNet Standards:** GS1 US is a 500-member CIT industry consortium that sets standards for business information
- **SWIFT:** global member-owned cooperative and leading provider of secure financial messaging services



THE GLOBAL LANGUAGE
OF BUSINESS



The global provider
of secure financial
messaging services

SOURCE:

<https://www.swift.com/about-us>

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Technology standards

- **Central banks:** Committee on Payments and Market Infrastructures (formerly known as the Committee on Payment and Settlement Systems (CPSS))
- **Securities regulators:** International Organization of Securities Commissions (IOSCO),

Set and disseminate standards to “promote the safety and efficiency of payment, clearing, settlement, and recording systems supporting the financial markets.”

https://www.federalreserve.gov/paymentsystems/int_standards.htm

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Technology standards

“international risk-management and related standards for systemically important payment systems, central securities depositories, securities settlement systems, central counterparties, and trade repositories” are set forth in the [Principles for Financial Market Infrastructures](#) .

https://www.federalreserve.gov/paymentsystems/int_standards.htm

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Technology standards

“The risk-management and transparency **standards** in the Federal Reserve’s [Regulation HH](#) and part I of the [Federal Reserve Policy on Payment System Risk](#) are based on and generally consistent with these international **standards**.

https://www.federalreserve.gov/paymentsystems/int_standards.htm

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Technology standards

Example: ITU Telecommunication Standardization Sector (ITU-T)

A Standard Setting Organization (SSO)

Technology standards include the X.500 computer networking standards apply to electronic directory services

(The X.509 standard is for a public key infrastructure (PKI) regarding digital certificates and public-key encryption)

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Are technology standards a source of market power?

- Technology standards help promote competition.
- SSOs have incentives to choose efficient standards

See **Spulber, Daniel**. 2013. Innovation Economics: The Interplay among Technology Standards, Competitive Conduct, and Economic Performance. *Journal of Competition Law and Economics*. 9(4): 777-825.

See **Spulber, Daniel**. 2016. Standard Setting Organizations and Standard Essential Patents: Voting Power versus Market Power,

http://www.law.northwestern.edu/research-faculty/searlecenter/innovationeconomics/documents/Spulber_Standard_Setting_Organizations_and_SEPs.pdf

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Are technology standards a source of market power?

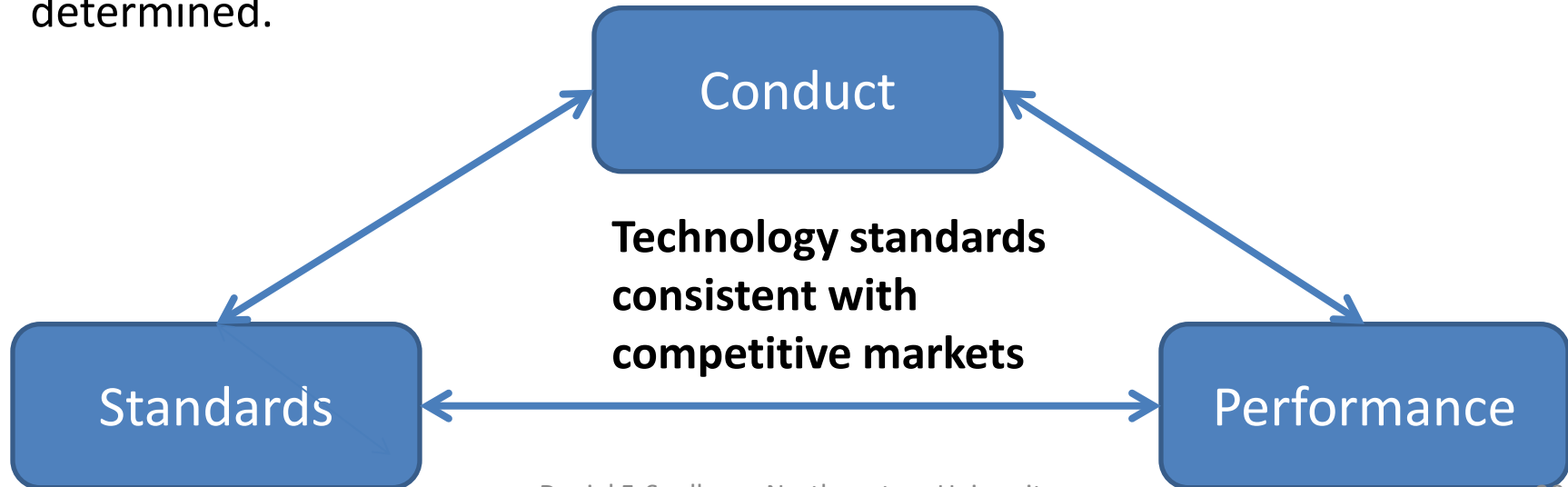


Outdated view: The “Standards-Conduct-Performance” paradigm: Technology standards (after they are established) determine competitive conduct (market power), and in turn, performance in invention and product markets.

Payment markets

Are technology standards a source of market power?

Innovation Economics suggests that technology standards, firm conduct (competition and innovation), and economic performance are jointly determined.



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Patents

- Necessary for efficiency of transactions in the market for inventions
- Help the market for inventions to be a “market for innovative control” (my term)
- Important for financing invention and innovation

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My research shows that:

- Patents are very important for invention and innovation
- Standard Essential Patents (SEPs) should not be a concern for antitrust or other policy makers.

This applies to payment markets

See **Spulber, Daniel**. 2015. How Patents Provide the Foundation of the Market for Inventions. *Journal of Competition Law and Economics*. 11(2): pp. 271-316.

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Technology standards in payment markets deserve additional economic analysis and research.

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Thank you!