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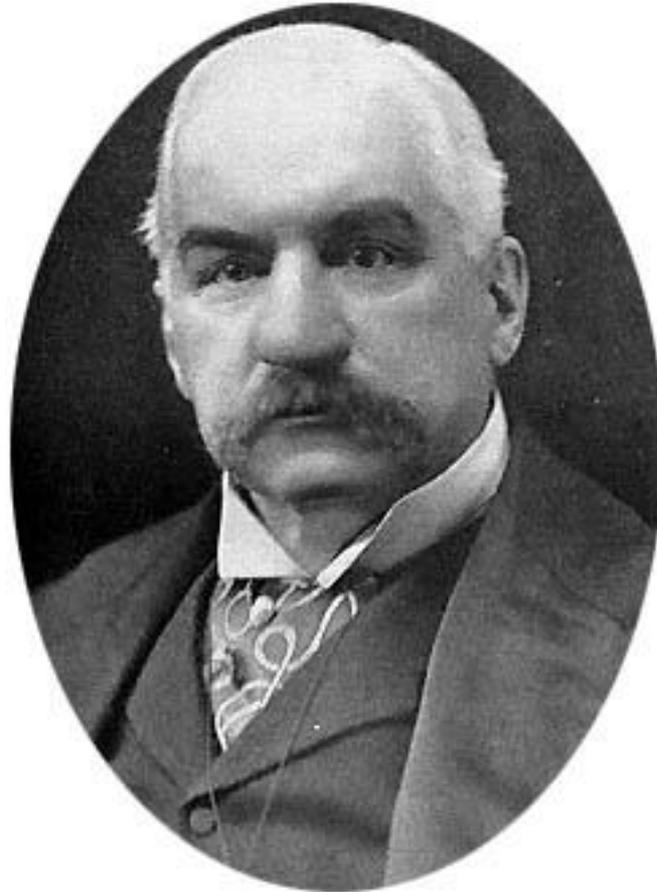
***DYNAMIC TRENDS IN FINTECH INNOVATION: IMPLICATIONS FOR REGULATORS
AND MARKET DEVELOPMENT***

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Fintech innovator?



Themes

1 Regulation: the challenge from innovation and change

2 Core regulatory principles: base case and fintech

3 Principles for innovation/fintech regulation

4 Challenges—developing a framework

5 Cooperation: providers, regulators, region

6 Next steps

Core Regulatory Principles

Core financial regulatory principles:

- **Safety/soundness**—Safety and soundness of the entire financial system/infrastructure is a core function of prudential regulation. Regulation should identify risks to overall safety while acknowledging efficient provision of services. This can be coupled with the monetary policy mandates of central banks.
- **Customer protection**—Protection of customer deposits (banking) to create confidence and development of a fair investment market (securities regulators) remains a bedrock principle for regulation.
- **Risk and resiliency**—Regulation should both determine which risk needs to be addressed and how to calibrate regulation to address that risk. Balancing this right fosters overall resiliency.
- **Incentives**—Regulation should create the right set of incentives/goals for financial institutions, customers and regulators, and increasingly, in the current change environment, non-financial firms.
- **Accountability**—Appropriate levels of accountability for firms, regulators and other policy makers in connection with responsibilities/requirements/activities.
- **Development**—Many, but not all, regulators are mandated to promote market development.
- **Purpose/Fairness**—Regulation should never lose sight of the importance of financial markets for growth and for the general welfare of citizens and be seen as fair (drawing on each of the other principles).

Innovation in financial services

- ***Change/Innovation:*** Financial institutions will use innovation and technology to:
 - ***Better serve and protect customers***
 - New and custom products (revenue opportunities)
 - Convenience and speed—payments, account management (efficiency)
 - ***Provide advice; create pathways to underserved***
 - ***Improve certainty and speed of delivery***
 - Distributed ledger technology (DLT)
 - ***Enhance competition***
 - Banks will develop in house capabilities
 - Banks will buy tech third parties
 - Banks will compete directly with third party providers
 - ***Enhance compliance***
 - Internal compliance monitoring
 - ***Develop better trading analytics***
 - Algo trading

Significant regulatory hurdles to innovation

What are the chief impediments to creating the right regulatory environment?

- ***Uncertainty***

- Who is regulated?
- What activities?
- Clear requirements? Are requirements the same for all participants?

- ***Lack of Transparency***

- How are rules determined?
- What level of market interaction?
- Confidence in regulatory expertise?

- ***Inconsistent Approaches***

- Domestic inconsistencies: central bank/prudential regulators, securities regulators, consumer protection agencies
- Regional inconsistencies: competing local regulators (attracting technology)
- Global inconsistencies: standard setting bodies can develop consistent approaches but must be fully coordinate across the regulatory landscape.

Principles for innovation/fintech regulation

- **Importance of innovation:** All innovation carries uncertainty and risk but failure to foster innovation could lead to loss of competitiveness in the global market, less safe financial infrastructure and a lag in meeting customer demand. New technology can both provide significant efficiencies and additional revenue as new products are developed.
- **Balance:** All regulation and development schemes need to balance the need to mitigate the risks with the tremendous opportunities for growth that the new technologies present.
- **Fintech:** How should we think about the fintech landscape? I would suggest three broad areas, each of these areas requiring a different application of principles:
 - **Raw computing:** Data services, speed, trading, operational benefits
 - **Smart computing:** AI and machine learning, investor advisory
 - **DLT technology:** payments, finality, smart contracts

Challenges to regulatory principles and current business models

- **Choice is driving change:** Technological advances, together with evolving consumer preferences, are reshaping the financial services industry at an accelerating pace (**speed**).
- **Non-bank sector challenge:** A large number of nonbank financial technology companies (fintech) have emerged to provide financial services through alternative platforms and delivery channels. Venture capital is flowing into these ventures at an accelerating rate (**new participants**).
- **Benefits:** While financial institutions are using innovation to better serve and protect customers, improve the security of the fintech ecosystem, compete with other providers of financial services (both bank and non-bank), and enhance compliance with regulations, these innovations need to be understood by regulatory policy makers (**limited expertise**).
- **Activities:** Fintech firms engage in broad bank-like activities (both independently and with banks): consumer lending, payments, wealth management and settlements. Applications make use of cloud computing, application programming interfaces, distributed ledgers, artificial intelligence and big data analytics (**limited expertise**).
- **Challenges:** Both banking institutions and regulators need to consider approaches to these changes consistent with regulatory core principles.

Principles to guide regulators to promote fintech development

The following principles can help guide policy makers as they considered encouraging safe innovation:

- **Flexibility:** Regulators should ensure flexibility of the regulatory framework to encourage and support innovation without compromising consumer protection or the safety and soundness of the financial system. This reflects on the traditional areas for both securities regulators (customer protection) and prudential regulators (soundness of system) (safety/soundness, customer protection, development, resiliency).
- **Principles-based:** Regulations and supervisory practices should be principles-based and technology-agnostic to accommodate future innovation without requiring regulatory reforms each time that new technology is created. New regulations may not be necessary. (safety/soundness, risk and resiliency, incentives).
- **Activity-based:** Innovation and customer protection are optimized when regulation is based on function or activity (rather than the type of entity or regulated status) and applied in a consistent manner. This can create a level playing field for all types of institutions, banks and non-banks. (purpose/fairness, accountability).
- **Collaborative:** Encourage collaboration and cooperation across regulators—domestically, regionally and globally. This will both encourage innovation in the private sector but maximize knowledge-sharing in the official sector. Consistent approaches across securities regulators, central banks and standard setters are vital for development (development).
- **Expertise:** Regulators should have advanced technological expertise to evaluate changing technologies and to be a credible participant in change (Safety/soundness, risk and resiliency, development).

Challenges to regulatory principles and current business models

- ***Speed of innovation/volatility:*** The challenge for regulators is significant and, given the pace of change, needs to be addressed quickly.
- ***Incremental vs. transformational change:*** Are innovations merely advances in older technologies/methods or truly transformational for the market and consumers?
- ***Core principle/protect consumers:*** Regulators need to encourage responsible innovation that protects consumers and guards against abusive or unsafe practices.
- ***Incentives for development:*** While risks remain (and some will still need to be identified), it is important for policy makers to create the proper incentives and safe-guards for innovation, promote innovation and coordinate it across sectors and jurisdictions. Failure of a financial ecosystem to address this, either through national, regional or global cooperation, threatens competitiveness and stability. Any system must balance the need to mitigate risks of innovation with the tremendous opportunities that innovation can bring.
- ***Past models may not give guidance:*** Backward looking approach to supervision doesn't work—see before financial crisis.

Creating a framework: coordination

- **Centralized leadership:** A central leadership body—domestically, regionally, globally—needs to coordinate a framework and approach:
 - **Assist:** Create a framework for activities-based fintech regulation and assist all relevant official sector bodies in adopting/implementing the framework consistently.
 - **Nurture:** Develop a regulatory sandbox to help financial institutions and fintech companies engage in responsible innovation and get real-time regulatory feedback.
 - **Share expertise/developments:** Take specific steps to ensure all bodies are enhancing their technical expertise.
 - **Harmonize:** Harmonize existing regulatory approaches across jurisdictions and agencies.
 - **Modernize:** Identify outmoded regulations.
 - **Building trust:** Centralized leadership can build broader trust through an open, collaborative, transparent process. Education, particularly in DLT, can jumpstart pickup.
 - **Coordinate:** Encourage further coordination—domestically, regionally, globally.
 - Global bodies (BIS, IOSCO) offer expertise and consistent standards

Creating a framework/specific requirements to consider

- **Data Protection:** Regulators should require that all entities with access to private data, including aggregators, adopt and follow appropriate minimum data handling and security standards, and act in a safe and responsible manner with consideration given to creating a supervisory regime.
- **Bank ownership:** Allow financial institutions to own fintech entities so long as such ownership is consistent with safe and sound practices.
- **Consumer advice/disclosure:** The relevant regulators with consumer protection jurisdiction should allow for digital forms of advice and should evaluate information/document delivery requirements.
- **DLT:** Foster responsible adoption of distributed ledger technology by updating any regulations across jurisdictions/multiple regulators.
- **Cloud standards:** Harmonize cloud computing standards
- **Global standards:** Discourage unreasonable data localization requirements by national authorities.
- **Machine learning:** Encourage the development of AI and machine learning tools for compliance.

Collaboration/expertise development/industry outreach

- ***Innovation offices:*** Establish dedicated office/staff (in US, the most prominent is the OCC Office of Innovation, LabCFTC) that can be the focus of outreach. Bring in tech companies to exchange information, develop expertise, communicate regulatory developments/concerns and foster responsible innovation. Encourages dialogue, transparency and fairness.
- ***Market outreach:*** Consider pro-active and ongoing dialogue with both financial firms and non-financial fintech providers.
- ***Markets intelligence:*** Establish ongoing market groups across sector for advice and granular insight into what is happening in markets attributable to technology innovations. What are the benefits/risks? Volatility? Include complete set of stakeholders: banks, non-bank tech providers, customers (both retail and wholesale). Needs to be ongoing, cohesive and comprehensive.
- ***Models from the US:*** Advisory committees, practice groups.

Other tools for outreach/development

- ***Trial operations:*** Allow for and encourage market experimentation with safety/soundness addressed.
 - Lets regulators see innovations early and permits testing against existing regulations
 - Develops regulatory expertise
 - Allows market participants to understand expectations

Examples: sandboxes and “proof-of-concept” approaches.
- ***Innovation competitions:*** Permits regulators/official sector to publish specific needs/gaps that could benefit from innovation; winning firms receive recognition, contract or cash; gives regulators further insight to what can be done.
- ***Agency-led incubator/accelerator:*** Can encourage a jurisdiction’s development of talent pool and fintech startups; may provide funding, access to regulators and mentors (either at or through the regulators), connections to outside funding sources, potential clients and working space.

Collaboration/Sandbox

- **Cross regulator/jurisdiction:** Create a single regulatory sandbox—domestic or regional.
- **Real time judgments:** Allows companies to experiment and gives regulators insight into latest innovations in real time.
- **Expertise development:** A sandbox should have clear rules and all relevant regulators should participate to promote regulatory certainty, efficiency, and shared learning.
- **Test/Lab environment:** Companies can test new ideas and products on a limited number of participants for a limited period of time, gain experience and feedback, and adapt the product or service accordingly.
- **Early/frequent feedback:** Regulator feedback should be early and frequent and would be a way to ensure safety, soundness, and consumer protection and halt innovations that clash with risk/resiliency core principles. Prevents the too-early adoption of certain technologies and identifies obstacles and challenges early.
- **Level playing field/compliance culture:** Minimum standards for participation would be imposed but should allow for non-financial firms to participate to inculcate a compliance culture.

Global examples: prominent pro-innovation jurisdictions

- **United Kingdom:** The UK regulatory approach is often considered the gold-standard. Fintech companies are subject to the same licensing requirements as other firms, but Project Innovate provides fintech companies with a platform to place products and services on the market and receive supervisory support during their first year of business.
 - Eligibility: Firms must be: 1. Engaged in supporting UK financial services firms; 2. genuinely innovative; 3. developing an identifiable consumer benefit; 4. in need of sandbox testing; 5. be ready to test.
 - As of January 2018, the Financial Conduct Authority had received more than 200 sandbox applications. Eighteen firms had graduated from a first cohort, 24 firms were set to go in a second cohort, and 18 were due for a third cohort.
- **Singapore:** No fintech licensing regime, but the Monetary Authority of Singapore has developed a fintech regulatory sandbox to provide fintech startups an opportunity to introduce new technologies on a smaller scale.
 - **Eligibility:** 1. the firm uses new technology or existing technology in an innovative way; 2. the products benefits consumers or industry; 3. the product will be deployed in Singapore.

Approach to development: possible sequence

- **Establish goals:** The official sector will need to determine goals—improve customer experience, develop capital markets, create fintech expertise, safety and soundness, payment certainty.
- **Develop expertise:** Create a dedicated innovation office.
- **Market outreach:** Create industry/official sector collaboration to validate goals and identify use cases. Helps determine both short and long term deployment of resources.
- **Regulator coordination:** Create robust regulator (domestic, regional, global) cooperation/coordination structure. Engage either global groups for aid or individual jurisdictions that have been trailblazers.
- **Create a framework:** Determine the right framework and principles to achieve particular goals.
- **Review current regulations:** Determine what regulations currently address innovation. Identify gaps consistent with overall regulatory approach and make changes to implement sandboxes/other tools.
- **Propose and solicit feedback:** Use market outreach to solicit feedback on potential changes. Allow for testing either through regulatory sandboxes or otherwise.
- **Supervise:** Assess results of innovation in real time and provide institutions with feedback.