

Behavioural Science Implications for Tech-based Financial Products and Innovations



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Outline

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 - a. Where does Tech intersect with Finance?
3. Existing literature - Finance vs. Tech
4. Regulatory impediments & response to Fintech
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Intro - the problem we're researching

- Finance is heavily regulated and uses well-tested behavioural interventions - e.g. pension enrolment
- Technology is disrupting finance, but the tech sector isn't regulated and is under-researched
- Innovative tech-based financial products and interventions introduce new issues:
 - New/ increased behavioural intervention opportunities - e.g. the unbanked
 - New/ increased risks - e.g. gamification
 - Change in reach and impact - Tech is global

Table 1: comparison of tech to finance

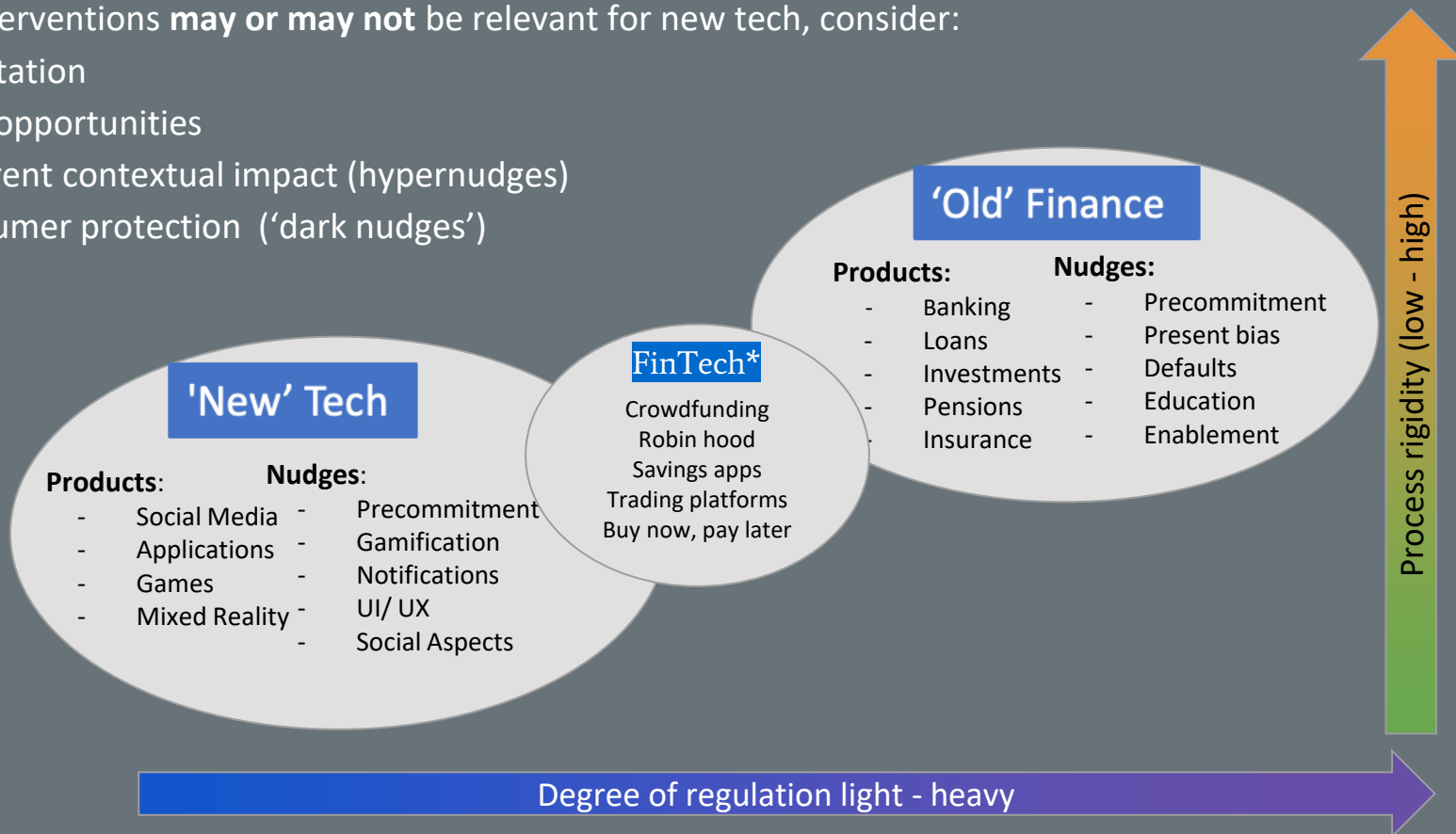
<i>Potential</i> Impact	+/-	Understanding	+/-
# interventions	+	Research	-
Benefits	+	Oversight	-
Harms	+		

The impact of these innovations calls for greater understanding

Definitions and intersections

Optimal interventions **may or may not** be relevant for new tech, consider:

- Adaptation
- New opportunities
- Different contextual impact (hypernudges)
- Consumer protection ('dark nudges')



Where does tech-finance intersect?

A deeper look at the difference between tech and fintech

Finance

ORIGINAL NUDGE

- 'Soft and mild' nudge utilising human cognitive tendencies
- E.g. SMART

Finance + Tech

HYPERNUDGE

- Choice architecture using bigdata, personalised information and computer algorithms
- E.g. BNPL nudges on web-shopping based on past purchasing behaviours, bigdata-driven alerts & popups

FINTECH DARK NUDGES

- **Dark patterns:** a set of (deliberate) manipulative practices identified by user experience e.g. consent management
- **Sludge:** making it hard for consumers to take action in their interests;
- **Dark nudges:** which make it easy for consumers to take action that is not in their interests

Source: Yamazaki, 2020

Source: BIS, 2020

Finance + Tech = Fintech



Existing Literature - Finance vs. Tech

Employee savings

- Save More Tomorrow plan [Thaler and Benartzi, 2004]

Stock trading

- Cross-section of average returns (skewness); aggregate stock market returns; trading of financial assets over time [Barberis, 2013]
- Psychological biases (weather, sadness) [Hirshleifer and Shumway, 2013; Lerner et al., 2004]

Tax compliance

- Social norms, framing [Hallsworth et al., 2017]

User behaviour

- Choice architecture (menus, UI) [Thaler and Benartzi, 2004]
- Accuracy reminder nudges [Pennycook et al., 2020]
- Gamification [Koivisto and Hamari, 2019]

Virtual reality

- Cognitive task performance improvement [Banakou et al., 2018]

Social media

- Personality trait predictions [Kosinski et al., 2013]
- Psychological targeting [Matz et al., 2017]

Regulatory impediments & response to fintech

Fintech is evolving at a rate faster than regulators can keep up:

- Different (re)actions from regulators - tighten up (killing innovation) or liberalise entry (systemic risk /consumer effected)

Regulatory impediments

Lack of knowledge & information asymmetry

Cost of regulating new tech

Uncertainty

Systemic risk resulting from regulation or non-regulation

Cost of regulatory mistakes

Regulatory capture

Reduced competition

Moral hazard due to rigid regulatory regime

Fragmented regulatory regime

Cost of compliance

Regulatory responses

Regulatory responses

Regulatory status unchanged

Fintech-specific regulation

Fintech-specific licensing regime

Fintech-specific requirements or supervisory expectations

Work in progress

Fintech activity not allowed

- Using Nudge/Sludge as a Regulatory Tool
 - Disclosure requirements to increase salience
 - Sludge 'filters' fintech players ?
 - Social norms and reputation cascades
 - Sandbox, which may lead to riskwashing

Source: (Cohen & Jabotinsky, 2020)

Discussion/Conclusion

Regulators



- Changing default requirements for fintech players/products ('reverse' dark nudges)
- Signalling of openness to innovation

Finance cos.



- BI already heavily incorporated
- Continued assessment that current nudges are still appropriate with new tech

Tech cos.



- Enhanced scope of personalised BI
- But increased risk of dark nudges/dark patterns

Collaboration across stakeholders to promote beneficial fintech developments

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