



COLLEGE OF BUSINESS  
ADMINISTRATION & PUBLIC POLICY

# Workforce – Training the FinTech workforce of the future

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Finance

Fin Tech

Technology

DIGITAL DISRUPTION OF EPIC PROPORTIONS!

# Intuitive Implications of Major (Fin) Tech Innovations for Workforce Requirements

- ?? Unknown
- Blockchain (2008 – 2017)
- Hi Frequency Trading (2016)
- Robo-Advisors (2008-2010 Betterment 2010)
- P2P Borrowing/Lending (Prosper 2005)/Crowd financing (Indiegogo 2008)
- Online Banking (BOA 2001; 1994-2001)/Debit Cards(1990s; 1960s-1990s)
- Excel Program (Windows Version 1987)
- ATM (“George” 1978 – because of a personal connection; Late 1960s, popularized in late 1970s.)
- Mutual Funds (Modern birth- Vanguard, Bogle 1974 – offered MFs to retail investors)/MMFs
- Credit Cards (Diner’s Club 1950)
- Checking (Modern Banking Era in the U. S. 1913; Brinks Armored Trucks since 1859..)
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## IMPLICATIONS FOR WORKFORCE REQUIREMENTS:

Disruptive, Non-linear, Creative Destructive’ process... often leading to greater need for technology and ‘Knowledge workers’ once the ‘dust settles down’! More Technology, Please!

# What are the present and future Workforce Needs of the FinTech Industry?

## 1. Which Career paths are needed?

Projections are for continued growth in jobs such as IT Technicians, Data Scientists, Computer Programmers, Software Engineers (Blockchain Developers?), Financial Analysts, Supply Chain Management Analysts, Interdisciplinary Financial Experts, and so on. These jobs represent intersection of IT skills and those that constitute knowledge of financial services since, after all, FINTECH is the union of Finance and Technology.

## 2. What are the Market Projections for future job growth in FinTech related occupations?

# Workforce Projections: Job Growth 2016-26

	2016 employment (000)	Growth Rate 2016-2026 (%)	Median 2017 Earnings
<b>Total, All Occupations</b>	<b>156,063.3</b>	<b>7.2</b>	<b>\$ 37,690</b>
Software developers, applications	831.3	30.7	\$ 101,790
Information Security Analysts	100	28.5	\$ 95,510
Personal Finance Advisors	271.9	24.3	\$ 90,640
Financial Managers	580.4	18.7	\$ 125,000
Web Developers	162.9	15.0	\$ 67,990
Computer & information systems managers	367.6	12.0	\$ 139,220
Database administrators	119.5	11.5	\$ 87,020
Software developers, systems software	425.0	11.1	\$ 107,600
Financial Analysts	296.1	10.9	\$ 84,300
Computer systems analyst	600.5	9.1	\$ 88,270
Computer Network Architects	162.7	6.5	\$104,650
Network & computer systems administrators	391.3	6.1	\$ 81,100
Computer programmers	294.9	-7.2	\$ 82,240
Tellers	502.7	-8.3	\$ 28,210
Data Entry and Information Processing Workers	278.7	-24.4	\$ 32,960

# Related Jobs and Funding Trends for FinTech/Banking

- Between 2010-2020, IT jobs while being only 10% of the total U. S. jobs, are slated to grow by 22% while the average growth for all categories is about 15% for the same time period. (BLS Biennial Survey report). Augurs well for continued job growth.
- A recent Citigroup report says that the number of employees at American Banks would drop to 1.8 by year 2025 from 2.6 million in 2016 (31% drop) and 2.9 million just before the Global Financial Crisis (38% drop). (Popper, NYT, March, 2016). Job mix changing with drops in 'traditional sectors'.
- Private sector funding of FinTech startups Grew from \$ 1 billion in 2008 to over \$ 25 billion currently. (25 fold increase!). Catalyst for related job growth.

# How academia community is preparing future workforce of FinTech?

## Curriculum Majors at



- In CBAPP, Accounting, Finance and Economics:
  - Bachelor of Science in Business Administration (BSBA) degree concentrations in Finance that cover modern banking, financial markets and financial services
  - MS in Accounting – Fall 2019 expected start date
  - **Proposed Certificate in FINTECH**
- In CBAPP, Information Systems and Operations Management department we offer:
  - Bachelor of Science in Business Administration (BSBA) degree concentrations in Information Security.
  - Certificate in Business Analytics
- In CNBS, Computer Science department we offer:
  - MS in Cybersecurity (Security) - Started Fall 2018
  - MS in Computer Science (Data Analysis) - Started Fall 2015
  - BA in Computer Technology - Homeland Security Track (Security)- Started Fall 2008

# Continued --- How academic Community is preparing .....

## ➤ In fact, there are at least 2 ways to answer this question.

- Divide FinTech into two categories, conceptually : 'Traditional' FinTech vs 'Prospective' FinTech – difference is how much role is Blockchain assumed to have in a REALIZED sense.
- Re.: 'Traditional' FinTech Doing Well , in an ORDERLY, CREDIBLE fashion – prepared to cater to the discernable growth in needed talent. Ref. CSUDH curriculum as a sampling of such efforts.
- Re.: 'Prospective' FinTech Academe is SCRAMBLING!
  - Examples
  - Interdisciplinary, JIT – no established textbooks, like reality cooking shows. FOMO!

## ➤ Concluding remarks:

1. FinTech (Blockchain's Role) is still evolving and innovation adoption is rarely linear – witness, for example, ecommerce and internet went through dotcom burst to get to IoT and ubiquitous nature of Amazon.
2. Not only FinTech is evolving, academe and process of learning is evolving – Lifelong with multiple exit and entry points and modes of learning are changing – so more certificates, online module; greater role of learning by doing on the job, Coursera and edX, etc. Thus academe is keeping up too by changing as we speak!
3. More business & academic partnerships needed. A related development - LI acquiring Lynda.com 2015

Conclude with Good Venn-wishes for FinTech.  
Thank you!

