



# Technology, and Future of Work: A Relationship to Unveil for Education

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RESTRICTED



# THE 2010'S: A DECADE OF DISRUPTION



# SIGNIFICANT TECHNOLOGICAL ADVANCEMENTS

*something looks very common in our daily life,  
but just 10 years ago, it doesn't exist*





# IN OUR DAILY LIVES

## Brought Our Lives Online



*Social Media*



*Cloud*



*3G > 4G > 5G*



*Internet  
of Things*



*Wearables &  
augmented  
humans*



*Robots &  
Automations*



*AI & machine  
learning*



*Voice interfaces  
& chatbots*



*Digital twins*

## Improved Our Quality of Life

## Creating a Better Future Life

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## Improved Our Quality of Life

## Creating a Better Future Life

## and you may have heard ...



*Regenerative Medicine*

*Immunotherapies, tissue engineering...*



*Space Traveling*

*manned & unmanned space exploration*



*Metaverse*

*"virtual" brought to life...*



# THE IMPACT ON THE JOB MARKET

## DISAPPEARED JOBS



Telegram  
Messenger



Switchboard  
Operator

## JOB NATURE CHANGED



Factory Manager/Worker

Manual >> Machine & Systems



Customer Service Centre

Call Centre >> Chatbot & CRM

## NEW JOB TYPE CREATED



App Developer

Digital Media Manager

Data Scientist/ Data Miner

## AUTOMATION WILL HAVE A FAR-REACHING IMPACT ON THE GLOBAL WORKFORCE

### Technical Automation Potential

~50%

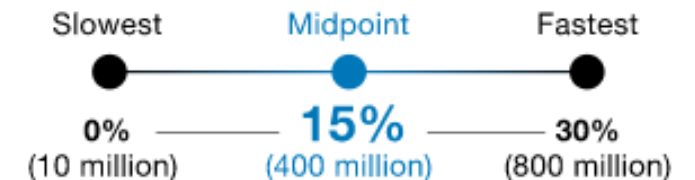
of current work activities are technically automatable by adapting currently demonstrated technologies

6 of 10

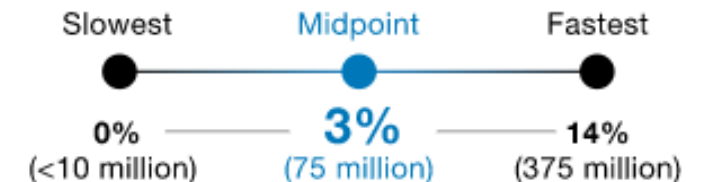
current occupations have more than 30% of activities that are technically automatable

### Impact of Adoption by 2030

Work potentially displaced by adoption of automation, by adoption scenario, % of workers (FTEs<sup>1</sup>)



Workforce that could need to change occupational category, by adoption scenario,<sup>2</sup> % of workers (FTEs)

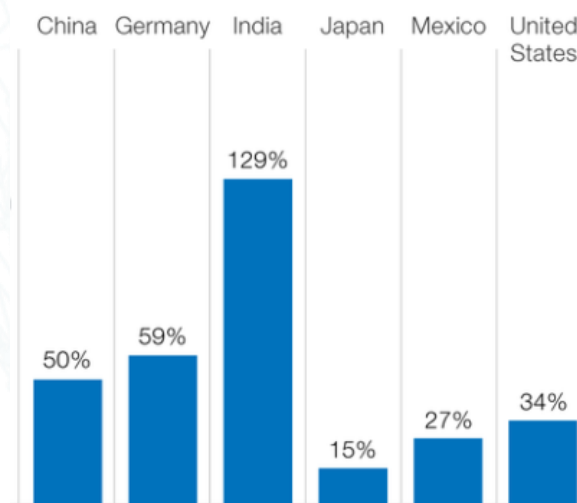


Source: McKinsey Global Institute

# OCCUPATIONAL SHIFTS

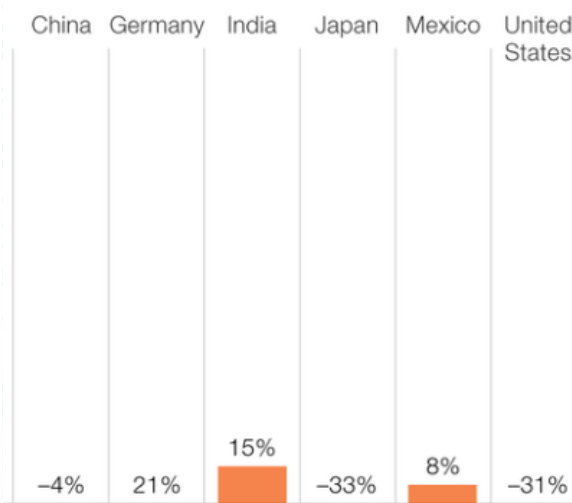
*When we are lifting productivity & economic growth, millions of people worldwide may need to switch occupations or upgrade skills.*

## Technology Professionals



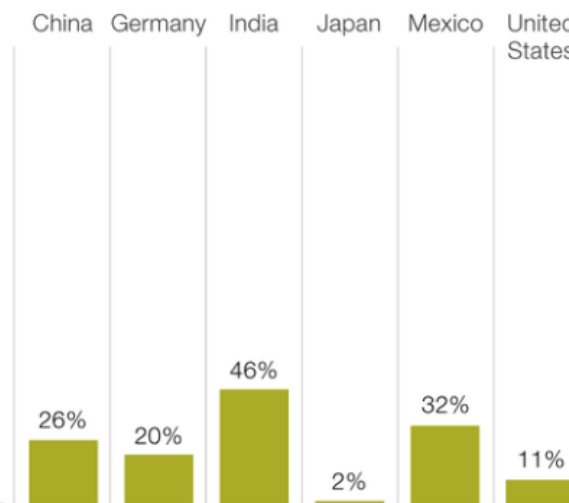
Includes: computer engineers, tech specialists

## Predictable Physical Work



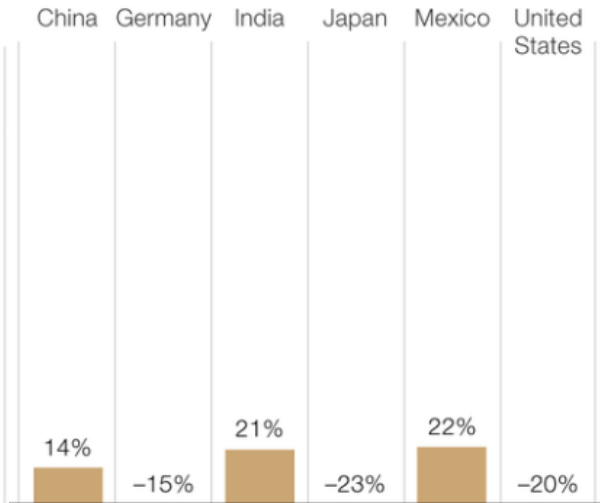
Includes: fine-equipment installation & repair workers, protective services, gaming-industry workers, dishwashers, cleaning-equipment operators, food-preparation workers, general mechanics

## Professionals



Includes: account managers, engineers, business & financial specialists, lawyers & judges, legal-industry support staff, math specialists, scientists, academics

## Office Support



Includes: IT workers, information & record clerks, office-support workers, financial workers (procurement, payroll, etc.) administrative assistants

Source: McKinsey Global Institute



## EMPLOYEE vs ENTREPRENEUR





**GET A JOB?**  
*as an employee...*



# STRONG DEMAND – I&T

✦ Hong Kong Science Park Virtual Career Expo 2021 by the numbers:

**2,400**

Job Opportunities



**1,000**

Job Opportunities  
in 2018

**+1,400**



Opportunities  
from

**270+**

companies



**51%**

of them with  
offices in GBA & overseas

**71%**

jobs at entry level

**85%**

jobs in areas of  
tech & R&D such as ...

AI engineers, data scientists,  
biomedical researchers, software developers,  
and UX/UI designers

**29%**

jobs at  
Management level



**23,000** visitors  
from 72 regions

HONG KONG SCIENCE PARK  
**CAREER  
EXPO**  
香港科學園職業博覽



# JOB MARKET

## ↗ Increasing demand

Tech-related  
New jobs in recent 15 years

|    |                                               |
|----|-----------------------------------------------|
| 1  | Data Analysts and Scientists                  |
| 2  | AI and Machine Learning Specialists           |
| 3  | Big Data Specialists                          |
| 4  | Digital Marketing and Strategy Specialists    |
| 5  | Process Automation Specialists                |
| 6  | Business Development Professionals            |
| 7  | Digital Transformation Specialists            |
| 8  | Information Security Analysts                 |
| 9  | Software and Applications Developers          |
| 10 | Internet of Things Specialists                |
| 11 | Project Managers                              |
| 12 | Business Services and Administration Managers |
| 13 | Database and Network Professionals            |
| 14 | Robotics Engineers                            |
| 15 | Strategic Advisors                            |
| 16 | Management and Organization Analysts          |
| 17 | FinTech Engineers                             |
| 18 | Mechanics and Machinery Repairers             |
| 19 | Organizational Development Specialists        |
| 20 | Risk Management Specialists                   |

## ↘ Decreasing demand

|    |                                                          |
|----|----------------------------------------------------------|
| 1  | Data Entry Clerks                                        |
| 2  | Administrative and Executive Secretaries                 |
| 3  | Accounting, Bookkeeping and Payroll Clerks               |
| 4  | Accountants and Auditors                                 |
| 5  | Assembly and Factory Workers                             |
| 6  | Business Services and Administration Managers            |
| 7  | Client Information and Customer Service Workers          |
| 8  | General and Operations Managers                          |
| 9  | Mechanics and Machinery Repairers                        |
| 10 | Material-Recording and Stock-Keeping Clerks              |
| 11 | Financial Analysts                                       |
| 12 | Postal Service Clerks                                    |
| 13 | Sales Rep., Wholesale and Manuf., Tech. and Sci.Products |
| 14 | Relationship Managers                                    |
| 15 | Bank Tellers and Related Clerks                          |
| 16 | Door-To-Door Sales, News and Street Vendors              |
| 17 | Electronics and Telecoms Installers and Repairers        |
| 18 | Human Resources Specialists                              |
| 19 | Training and Development Specialists                     |
| 20 | Construction Laborers                                    |

Source: World Economic Forum 2020

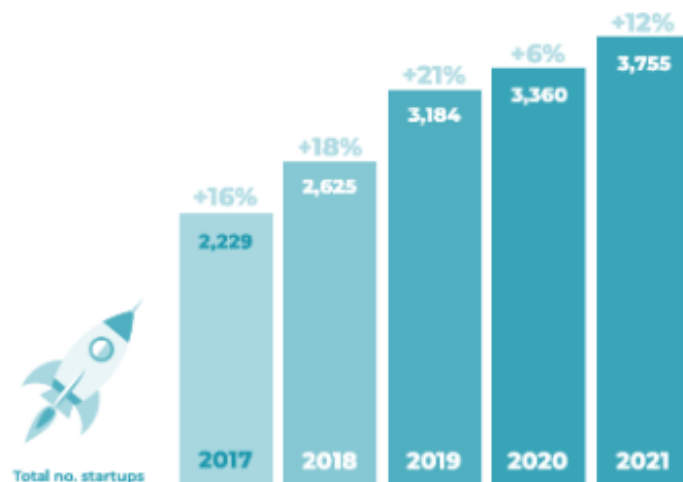
**START A BUSINESS?**  
*as an entrepreneur...*



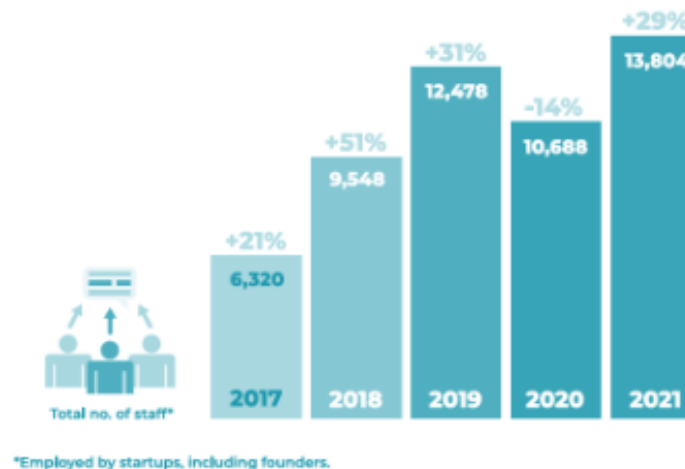


# START-UP ECOSYSTEM & SUPPORT

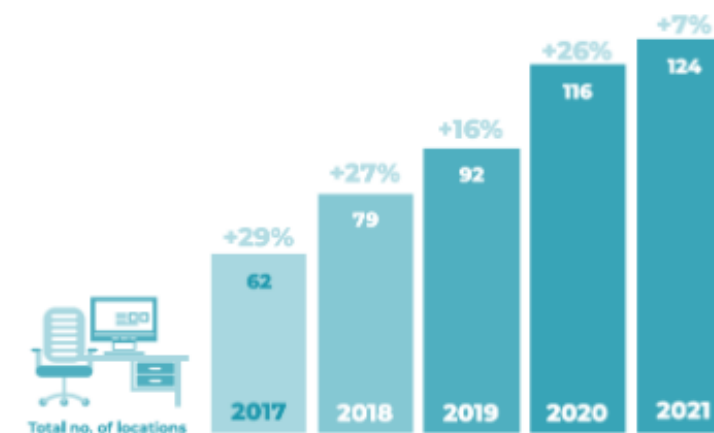
**3,755 startups, +68% vs 2017**



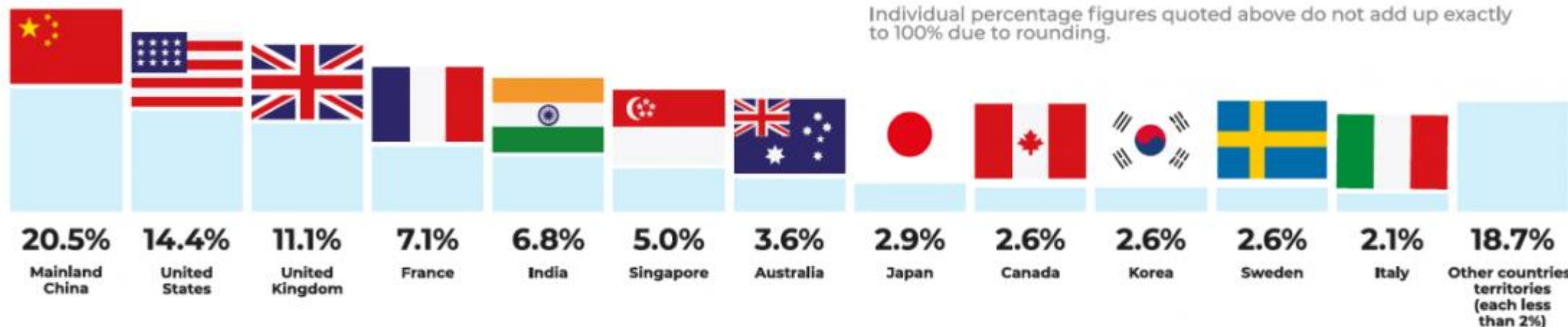
**13,804 employees, +118% vs 2017**



**124 locations of co-work spaces/incubators/accelerators, +100% vs 2017**



Individual percentage figures quoted above do not add up exactly to 100% due to rounding.



Percentage based on number of non-local founders with origin country/territory information provided

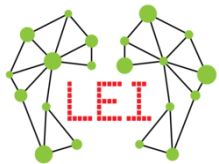
Source: InvestHK

# ENTREPRENEURSHIP SUPPORT in Universities

## CO-WORKING SPACES & FUNDING SCHEMES



TSSSU



HK  
TECH  
300



HKUST-Sino One-Million-Dollar  
ENTREPRENEURSHIP  
COMPETITION 2021



and  
more...



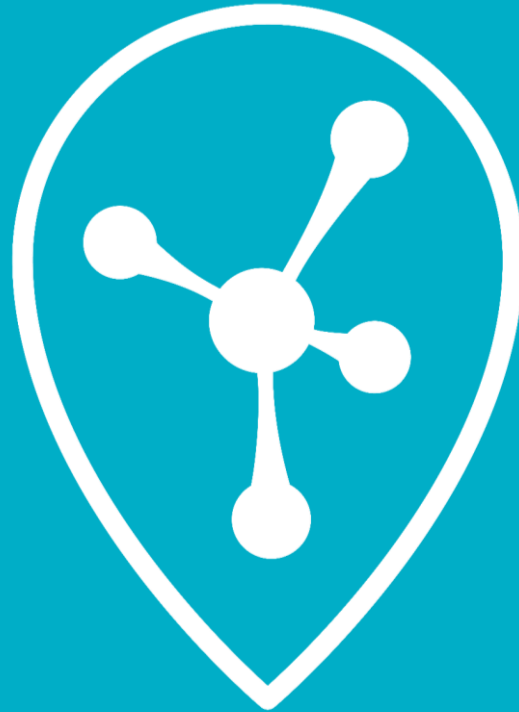
Photo credit: HKUST Entrepreneurship Centre





# HONG KONG TECHATHON



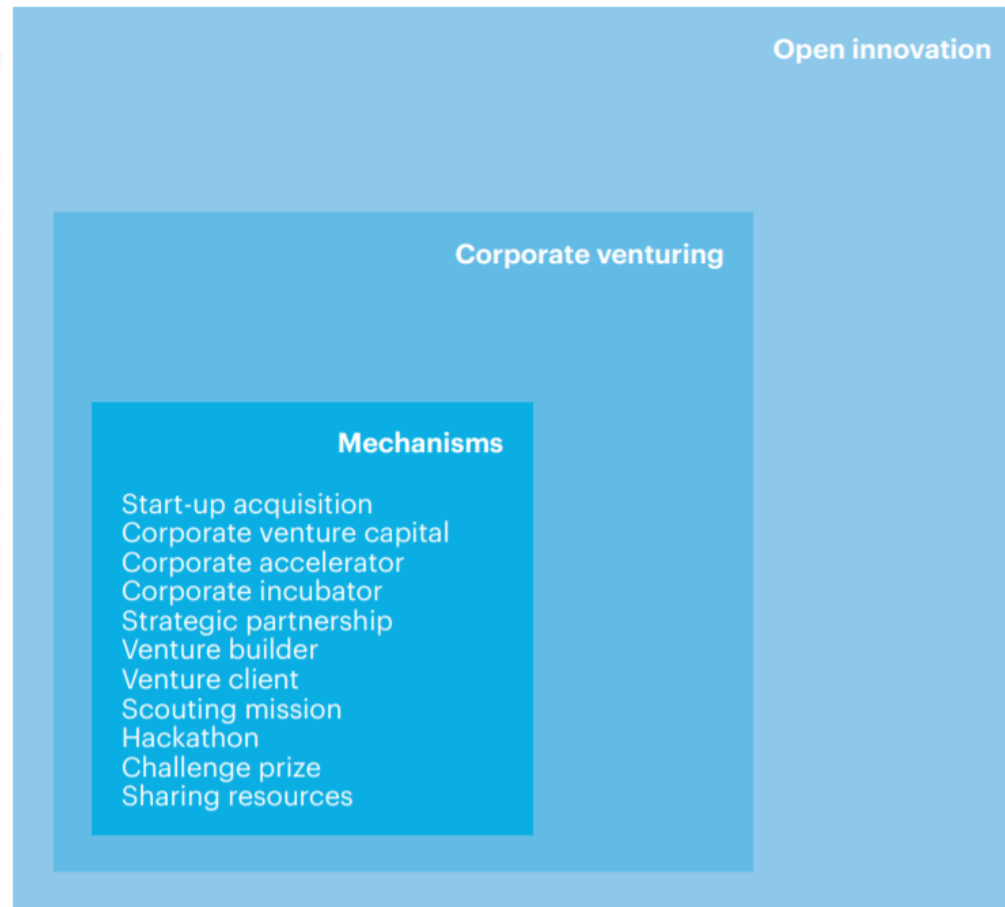


## THE OPPORTUNITIES

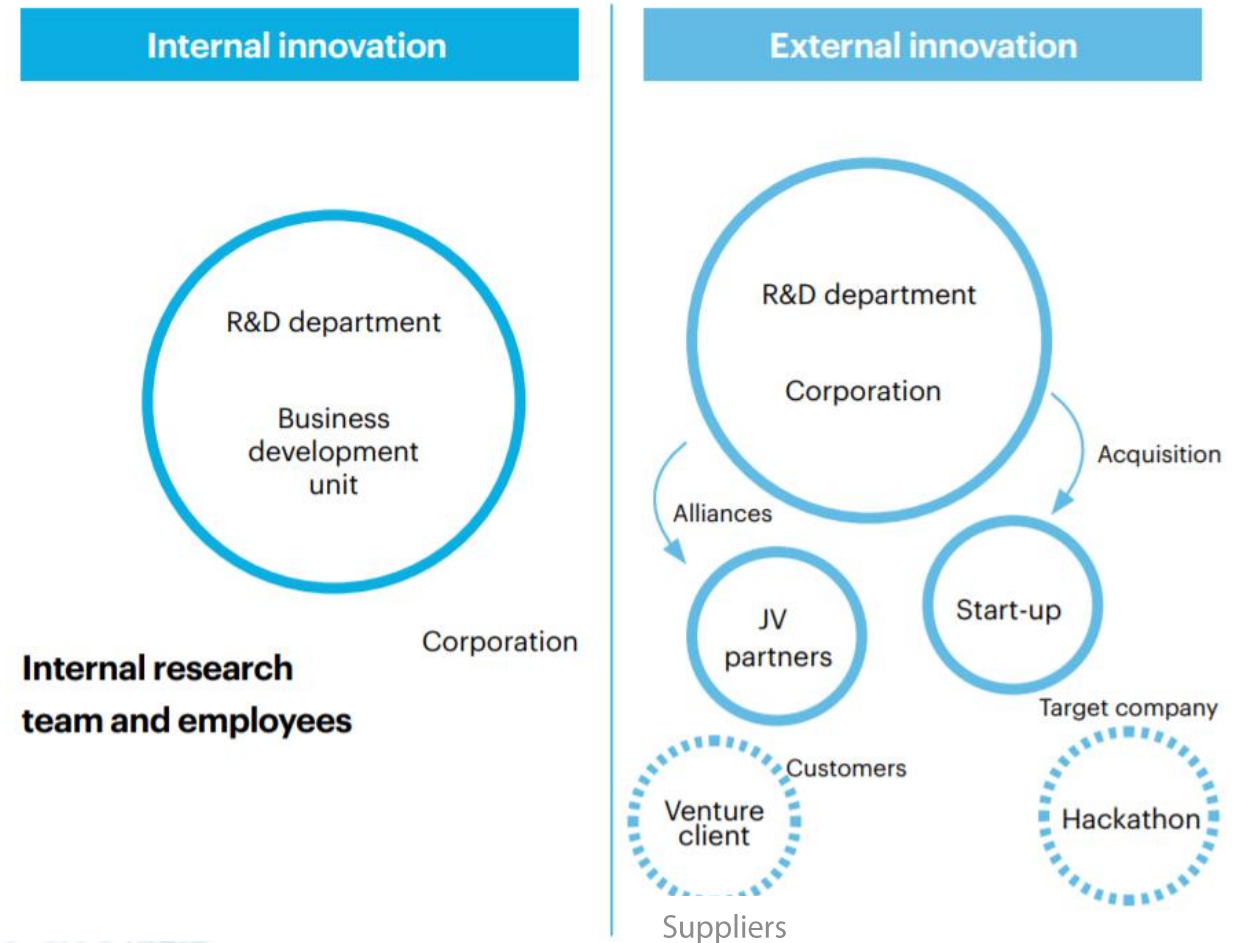


# CORPORATE VENTURING

*Big corporations also working with startups now*



Source: Julia Prats and Josemaria Siota; IESE Business School (2018).



Source: IESE Business School

# CORPORATE VENTURING

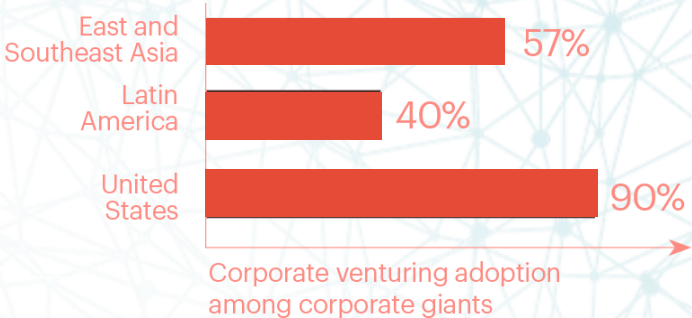
*Big corporations also working with startups now*

## THE TREND

**FUTURE**

**71%** Growth of companies expecting to increase Corporate Innovation in deep tech (**next 5 years**)

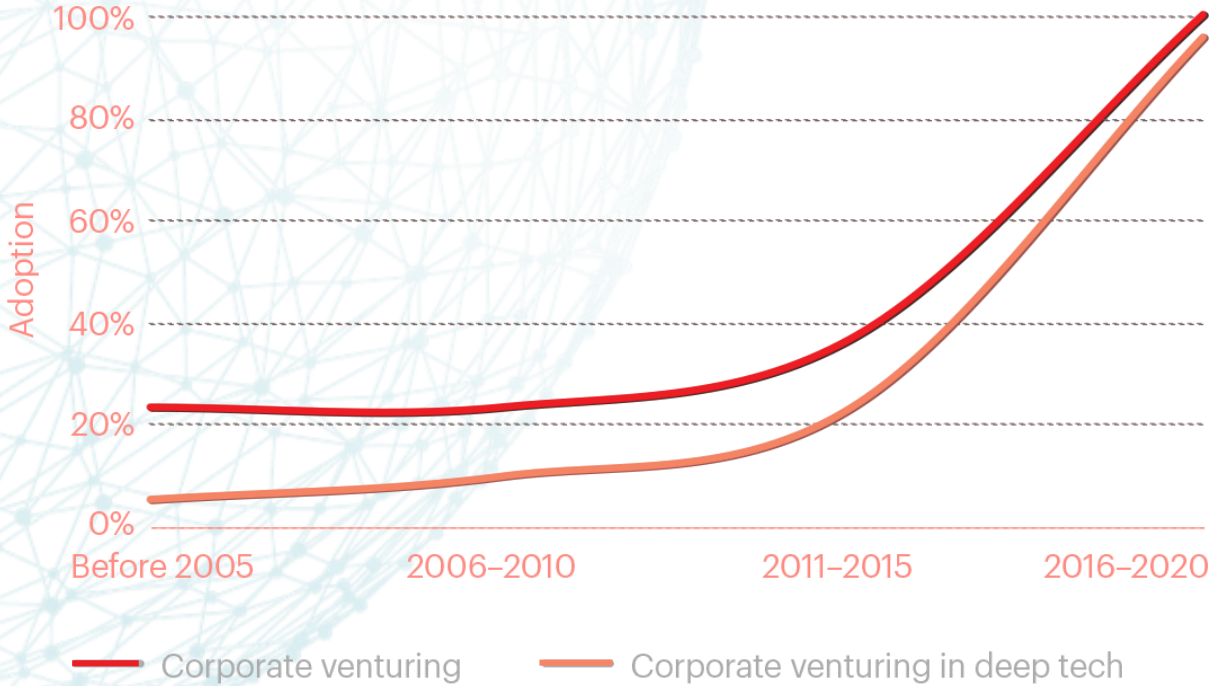
**NOW**



**PAST 5 YEARS**

**x4.2** Growth of Corporate Innovation in deep tech  
**x2.8** Growth of Corporate Innovation

Historical evolution in which corporations started to apply corporate innovation and work with deep-tech startups



Source: IESE Business School - Open Innovation: How Corporate Giants Can Better Collaborate with Deep-Tech Start-ups. The Case of East and Southeast Asia.



# EMPOWERING THE FUTURE TALENTS



INNOVATION



CREATIVITY



TEAMWORK



ETHICS



RESPONSIBILITY

## THE VALUE





*Innovation without limits...*

Organizer 主辦機構:  $\pi$  香港科技園公司  
Organizing Partner 合辦機構: HKSTP 香港科技園公司

CITY i&T GRAND CHALLENGE HONG KONG  
城市創科大挑戰

THE GRAND PITCH  
總決賽