


### International Conference on Business and Technology

ICBT 2021: **Innovation of Businesses, and Digitalization during Covid-19 Pandemic** pp 719–738

## Technological Entrepreneurship for University Research Outcomes

[Mohd Zulkifli Muhammad](#) , [Tamrin Amboala](#), [Dzulkifli Mukhtar](#), [Mahathir Muhamad](#),  
[Muhammad Naqib Mat Yunoh](#), [Mohd Fahmi Ghazali](#) & [Abd Aziz Mat Hassan](#)

Conference paper | [First Online: 08 July 2022](#)

**92** Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 488)

### Abstract

---

Commercialization of research by academic entrepreneurs have been recognized as an important driving force for technology transfer and wealth creation yet the level of success of commercialization of inventions

(innovations) for IT products from higher institution to industry is questionable. There is a paucity of agreed commercialization in terms of execution processes to support inventions of prototypes and products moving from laboratories to the right market. This research aims to investigate the commercialization of research outcomes for IT products from the research centers to facilitate the commercialization objective. The analysis is carried out based on selective case studies in the technology and science park with venture capitalist and firms from industry in the commercialization program engagement. The commercialization of technology and products are investigated based on resource based perspective and dynamic capabilities based on selected case studies. The research outcomes are expected to offer a research commercialization model and practical contribution for successful commercialization and licensing among academics' entrepreneurs.

## Keywords

**Technological entrepreneurship**    **IT/IS products**    **Research outcomes**

---

This is a preview of subscription content, [access via your institution](#).

---

▼ Chapter

EUR 29.95

> eBook

EUR 213.99

Price includes VAT (Malaysia)

- DOI: 10.1007/978-3-031-08090-6\_45
- Chapter length: 20 pages
- Instant PDF download
- Readable on all devices
- Own it forever
- Exclusive offer for individuals only
- Tax calculation will be finalised during checkout

Buy Chapter

› Softcover Book

EUR 249.99

[Learn about institutional subscriptions](#)

## References

---

Ab Aziz, K., Harris, H., Norhashim, M.: University research, development & commercialisation management: a Malaysian best practice case study.

World Rev. Bus. Res. **1**(2), 179–192 (2011)

---

Ajagbe, M.A., Isiauwe, D.T., Ogbari, E.M., Sholanke, A.B.: Financing early staged technology based firms in Malaysia. Res. J. Financ. Account. **6**(4), 210–221 (2015)

---

Albert, P., Gaynor, L.: Technology business incubation management: lessons of experience. In: High-Tech Entrepreneurship: Managing Innovation, Variety and Uncertainty. Routledge, London (2006).

---

Alvarez, S., Barney, J.B.: Has the concept of opportunities been fruitful in the field of entrepreneurship? *Acad. Manag. Perspect.* **34**(3), 300–310 (2020)

---

Ambos, T.C., Mäkelä, K., Birkinshaw, J., D'Este, P.: When does university research get commercialized? Creating ambidexterity in research institutions. *J. Manag. Stud.* **45**(8), 1424–1447 (2008)

---

Battaglia, D., Paolucci, E., Ughetto, E.: The role of Proof-of-Concept programs in facilitating the commercialization of research-based inventions. *Res. Policy* **50**(6) (2021)

---

Becker, B., Gassmann, O.: Corporate incubators: industrial R&D and what universities can learn from them. *J. Technol. Transf.* **31**(4), 469–483 (2006)

---

Berger, E.S., von Briel, F., Davidsson, P., Kuckertz, A.: Digital or not—the future of entrepreneurship and innovation: introduction to the special issue, pp.

436–442 (2021)

---

Berglund, H., Bousfiha, M., Mansoori, Y.: Opportunities as artifacts and entrepreneurship as design. *Acad. Manag. Rev.* **45**(4), 825–846 (2020)

---

Borg, E.A.: Knowledge, information and intellectual property: implications for marketing relationships. *Technovation* **21**(8), 515–524 (2001)

---

Bulsara, H.P., Gandhi, S., Porey, P.: Commercialization of technology innovations and patents. In: *Patent Commercialization*, p. 12 (2010)

---

Chandra, A., Medrano Silva, M.A.: Business incubation in chile: development, financing and financial services. *J. Technol. Manag. Innov.* **7**(2), 1–13 (2012)

---

Cunningham, J.A., Lehmann, E.E., Menter, M., Seitz, N.: The impact of university focused technology transfer policies on regional innovation and entrepreneurship. *J. Technol. Transf.* **44**(5), 1451–1475 (2019)

---

D'Este, P., Perkmann, M.: Why do academics engage with industry? The entrepreneurial university and individual motivations. *J. Technol. Transfer*

**36**(3), 316–339 (2011)

---

Dowling, G.: How good corporate reputations create corporate value. *Corp. Reput. Rev.* **9**(2), 134–143 (2006)

---

Eisenhardt, K.M., Martin, J.A.: Dynamic capabilities: what are they? *Strateg. Manag. J.* **21**(10–11), 1105–1121 (2000)

---

Farquhar, J., Michels, N., Robson, J.: Triangulation in industrial qualitative case study research: widening the scope. *Ind. Mark. Manag.* **87**, 160–170 (2020)

---

Fini, R., Rasmussen, E., Wiklund, J., Wright, M.: Theories from the lab: how research on science commercialization can contribute to management studies. *J. Manag. Stud.* **56**(5), 865–894 (2019)

---

Gable, G.G.: Information systems research strategy. *J. Strateg. Inf. Syst.* **29**(2) (2020)

---

Gedeon, S.: What is entrepreneurship? *Entrepreneurial Pract. Rev.* **1**(3)

(2010)

---

Grant, R.M.: The resource-based theory of competitive advantage: Implications for strategy formulation. *Knowl. Strategy* **33**(3), 3–23 (1991)

---

Henry, C., Hill, F., Leitch, C.: Entrepreneurship education and training: can entrepreneurship be taught? *Educ. Train.* **47**(2), 98–111 (2005)

---

Jeremy, G.: Which resources matter the most to firm success. An exploratory study of resource-based theory. *Technovation* **25**(9), 979–987 (2005)

---

Maine, E., Garnsey, E.: Commercializing generic technology: the case of advanced materials ventures. *Res. Policy* **35**(3), 375–393 (2006).

<https://doi.org/10.1016/j.respol.2005.12.006>

---

Markman, G.D., Phan, P.H., Balkin, D.B., Gianiodis, P.T.: Entrepreneurship and university-based technology transfer. *J. Bus. Ventur.* **20**(2), 241–263 (2005)

---

Minguillo, D., Thelwall, M.: Which are the best innovation support infrastructures for universities? Evidence from R&D output and commercial

activities. *Scientometrics* **102**(1), 1057–1081 (2015)

---

Mitchell, E., Watstein, S.B.: What's the buzz? *Ref. Serv. Rev.* **43**(2) (2015)

---

Mowery, D.C., Shane, S.: Introduction to the special issue on university entrepreneurship and technology transfer. *Manag. Sci.* **48**(1), v–ix (2002)

---

Munari, F., Toschi, L.: The impact of public funding on science valorisation: an analysis of the ERC proof-of-concept programme. *Res. Policy* **50**(6) (2021)

---

Oates, B.J.: *Researching Information Systems and Computing*. Sage, California, USA (2005)

---

Olanrewaju, A.S.T., Hossain, M.A., Whiteside, N., Mercieca, P.: Social media and entrepreneurship research: a literature review. *Int. J. Inf. Manag.* **50**, 90–110 (2020)

---

Basias, N., Pollalis, Y.: Quantitative and qualitative research in business & technology: justifying a suitable research methodology. *Rev. Integr. Bus.*



Econ. Res. **7**, 91–105 (2018)

---

Ratinho, T., Amezcua, A., Honig, B., Zeng, Z.: Supporting entrepreneurs: a systematic review of literature and an agenda for research. Technol. Forecast. Soc. Chang. **154** (2020)

---

Rubin, T.H., Aas, T.H., Stead, A.: Knowledge flow in technological business incubators: evidence from Australia and Israel. Technovation (2015)

---

Seneviratne, A., Percival, T.: National ICT Australia (NICTA). ACM SIGCOMM Comput. Commun. Rev. **35**(3), 61–64 (2005)

---

Shoib, G., Nandhakumar, J., Currie, W.: Contextualising the IT artefact: towards a wider research agenda for IS using institutional theory. Inf. Technol. People **22**(1), 63–77 (2009)

---

Siegel, D.S., Waldman, D.A., Atwater, L.E., Link, A.N.: Toward a model of the effective transfer of scientific knowledge from academicians to practitioners: qualitative evidence from the commercialization of university technologies. J. Eng. Technol. Manag. **21**(1), 115–142 (2004)

---

Täks, M., Tynjälä, P., Kukemelk, H.: Engineering students' conceptions of entrepreneurial learning as part of their education. *Eur. J. Eng. Educ.* 1–17 (2015)

---

Teddlie, C., Tashakkori, A.: Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences. Sage Publications Inc., California, USA (2009)

---

Thorburn, L.: Spinning along: CSIRO's knowledge business. *Innovation* **9**(2), 159–169 (2007)

---

Wang, M., Soetanto, D., Cai, J., Munir, H.: Scientist or entrepreneur? Identity centrality, university entrepreneurial mission, and academic entrepreneurial intention. *J. Technol. Transf.* 1–28 (2021)

---

Wang, T., Qiu, L., Sangaiah, A.K., Liu, A., Bhuiyan, M.Z.A., Ma, Y.: Edge-computing-based trustworthy data collection model in the internet of things. *IEEE Internet Things J.* **7**(5), 4218–4227 (2020)

---

Woltjer, G., Van Galen, M., Logatcheva, K.: Industrial innovation, labour

productivity, sales and employment. *Int. J. Econ. Bus.* **28**(1), 89–113 (2021)

---

Wright, M., Vohora, A., Lockett, A.: The formation of high-tech university spinouts: the role of joint ventures and venture capital investors. *J. Technol. Transf.* **29**(3–4), 287–310 (2004)

---

Wu, Y., Welch, E.W., Huang, W.-L.: Commercialization of university inventions: individual and institutional factors affecting licensing of university patents. *Technovation* **36**, 12–25 (2015)

---

Yin, R.K.: *Case Study Research: Design and Methods*. Sage publications, California, USA (2013)

---

Yusof, M., Siddiq, M.S., Nor, L.M.: An integrated model of a university's entrepreneurial ecosystem. *J. Asia Entrep. Sustain.* **5**(1), 57 (2009)

---

## Author information

---

### Authors and Affiliations

**Universiti Malaysia Kelantan, Jalan Pengkalan Chepa, 16100, Kota Bharu, Kelantan, Malaysia**

Mohd Zulkifli Muhammad, Dzulkifli Mukhtar, Mahathir

Muhamad, Muhammad Naqib Mat Yunoh & Abd Aziz Mat Hassan

**Faculty of Computing and Informatics, Universiti Malaysia Sabah, 87000, Labuan, Malaysia**

Tamrin Amboala

**Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor, Malaysia**

Mohd Fahmi Ghazali

Corresponding author

Correspondence to [Mohd Zulkifli Muhammad](#).

## Editor information

---

Editors and Affiliations

**Northern Cyprus Campus, Middle East Technical University, via Mersin 10, Turkey**

Assist. Prof. Bahaeddin Alareeni

**College of Business of Finance, Ahlia University, Manama, Bahrain**

Prof. Dr. Allam Hamdan

## Rights and permissions

---

[Reprints and Permissions](#)

## Copyright information

---

© 2023 The Author(s), under exclusive license to Springer Nature

Switzerland AG

## About this paper

---

### Cite this paper

Muhammad, M.Z. *et al.* (2023). Technological Entrepreneurship for University Research Outcomes. In: Alareeni, B., Hamdan, A. (eds) Innovation of Businesses, and Digitalization during Covid-19 Pandemic. ICBT 2021. Lecture Notes in Networks and Systems, vol 488. Springer, Cham. [https://doi.org/10.1007/978-3-031-08090-6\\_45](https://doi.org/10.1007/978-3-031-08090-6_45)

[.RIS](#)  [.ENW](#)  [.BIB](#) 

DOI

[https://doi.org/10.1007/978-3-031-08090-6\\_45](https://doi.org/10.1007/978-3-031-08090-6_45)

Published

08 July 2022

Publisher Name

Springer, Cham

Print ISBN

978-3-031-08089-0

Online ISBN

eBook Packages

978-3-031-08090-6

[Engineering](#)

[Engineering \(R0\)](#)

Not logged in - 219.93.20.170

Universiti Malaysia Kelantan (3000162422)

**SPRINGER NATURE**

© 2022 Springer Nature Switzerland AG. Part of [Springer Nature](#).