



The digitalization of SMEs in service industries: How can policy help?

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**Safe and Ethical Cyberspace, digital assets and risks:
*How to assess the intangible impacts of a growing phenomenon?***

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Agenda

- I Productivity and services: why talk about digitalization?
- II The economic importance of services with a focus on tourism and retail
- III Possibilities for digitalizing a service industry: The case of tourism
- IV Zooming in: digitalizing tourism in a mid-sized city in Germany
- V Digitalizing retail: a few thoughts on a big challenge
- VI Recommendations and generalized policy implications

About me



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***Regional Development
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The productivity slowdown (1/3)

- Productivity growth in OECD economies has slowed down since the 1990s and early 2000s (OECD 2016)
- However, productivity growth of the most productive firms ("frontier") has remained robust (OECD 2015)
- Thus, the productivity slowdown is probably not due to a lack of innovation *per se* but to a lack of diffusion (OECD 2015; 2016)

OECD (ed.) (2015): The Future of Productivity. Paris: Organisation for Economic Co-operation and Development.

OECD (ed.) (2016): OECD Regional Outlook: Productive regions for inclusive societies. Paris: Organisation for Economic Co-operation and Development.

The productivity slowdown (2/3)

- Aggregate productivity growth can be disaggregated into three components (Criscuolo 2015; OECD 2016):
 - (i) growth at the global frontier,
 - (ii) growth at the national frontier, and
 - (iii) growth of laggards
- Between each of the three components of productivity growth, diffusion takes place

Criscuolo, C. (2015): Productivity is soaring at top firms and sluggish everywhere else. In: Harvard Business Review, <https://hbr.org/2015/08/productivity-is-soaring-at-top-firms-and-sluggish-everywhere-else> (25.05.2018).

OECD (ed.) (2016): OECD Regional Outlook: Productive regions for inclusive societies. Paris: Organisation for Economic Co-operation and Development.

The productivity slowdown (3/3)

- “The productivity problem isn’t a lack of global innovation. It’s a failure by many firms to adopt new technologies and best practices” (Criscuolo 2015)
- Thus, there is a case for promoting the diffusion of productivity-enhancing innovation across national or regional economies
- Encouraging the use of digital technologies is a way to do so!

Criscuolo, C. (2015): Productivity is soaring at top firms and sluggish everywhere else. In: Harvard Business Review, <https://hbr.org/2015/08/productivity-is-soaring-at-top-firms-and-sluggish-everywhere-else> (25.05.2018).

The economic importance of services

- In Germany, the trade, transportation, and hospitality sectors together account for 16.1 percent of GVA (2017) (Fed. Statistical Office 2018a)
- Tourism is particularly labor-intensive:
Tourism accounts for 3.9 percent of GVA in Germany (2015) and for 6.8 percent of domestic employment (BMW i 2017: 8)
- The accommodation and food service industries employ c. 1.6 million people in Germany (2016) (Fed. Statistics Office 2018b)
- Retail employs 3.0 million people in Germany (2012) (HDE 2013: 6)

BMW i (ed.) (2017): Wirtschaftsfaktor Tourismus in Deutschland: Kennzahlen einer umsatzstarken Querschnittsbranche: Ergebnisbericht. Berlin: Bundesministerium für Verkehr und Energie.

Fed. Statistical Office (ed.) (2018a): Inlandsproduktberechnung: Bruttowertschöpfung nach Wirtschaftsbereichen, <https://www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/VGR/Inlandsprodukt/Tabellen/BWSBereichen.html> (12.05.2018).

Fed. Statistical Office (ed.) (2018b): Persons in employment: Germany, years, economic sections (WZ2008), sex, <https://www-genesis.destatis.de/genesis/online/link/tabelleErgebnis/12211-0009&language=en> (12.05.2018).

Handelsverband Deutschland HDE (ed.) (2013): Branchenreport Einzelhandel: Der Handel als Arbeitgeber. Berlin: Handelsverband Deutschland (HDE).

Digitalizing tourism: A taxonomy of tools and objectives

Digital tool	Rationali- zation	Value creation	Market development	Market creation
Website with online booking	✓			
Online booking on a platform	?		✓	
Social media			✓	
Enhanced experience app (hotel room, museum, self-guided city tour) or virtual reality		✓		
Transportation app	✓			
Integrated travel app	✓	✓		
Virtual travel website/app for the destination		✓		✓

Source: own work.

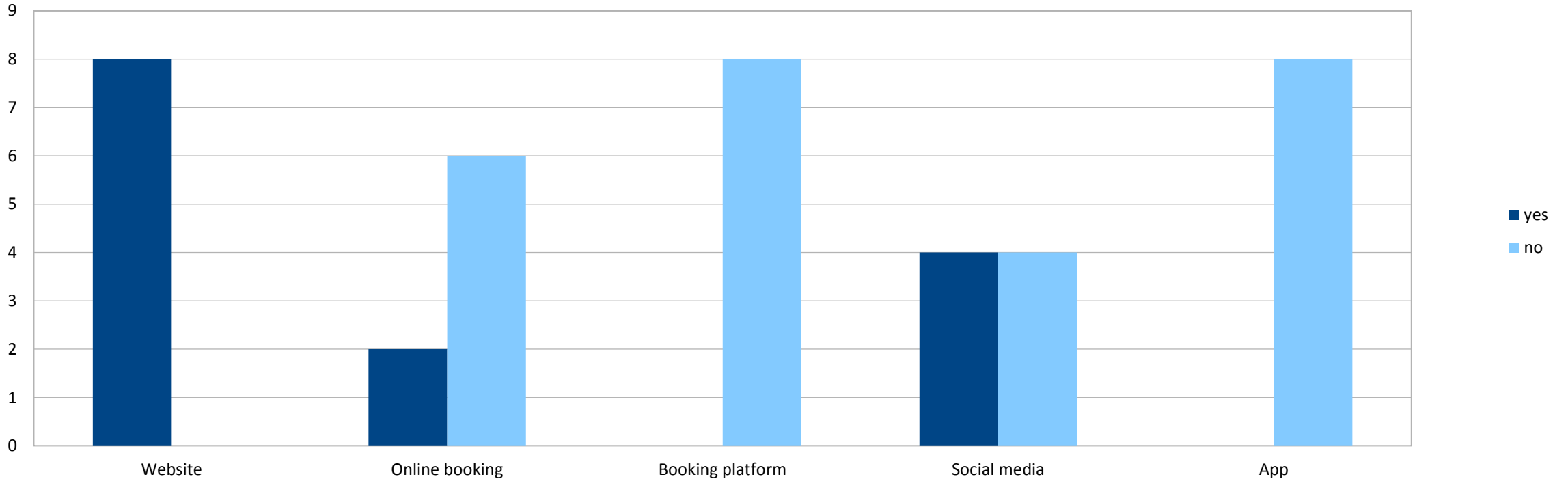
Zooming in: Digitalizing tourism in a mid-sized city in Germany

- Rosenheim: mid-sized city (c. 60,000 inhabitants) in Upper Bavaria
- Economic hub of a region spanning Bavarian and Austrian regions with c. 500.000 inhabitants between three urban centers (Munich, Salzburg, Innsbruck)
- Site of a growing technical university of applied sciences
- Local clusters in ICT and wood-related technologies; institutionalized cluster initiatives in ICT and retail
- Regional trade hub in retail (350 shops in the central business district)
- Focus on niche tourism: MICE (public conference center) and day trippers (exhibition center of national importance)

Source: Stadt Rosenheim (ed.) (n.d.): Jahreswirtschaftsbericht 2016/2017. Rosenheim: Stadt Rosenheim, <https://www.rosenheim.de/fileadmin/Dateien/Wirtschaftsf%C3%B6rderung/Jahreswirtschaftsbericht%20Rosenheim%2016-17.pdf> (12.05.2018).

Tourism digitalization in Rosenheim: The status quo (1/3)

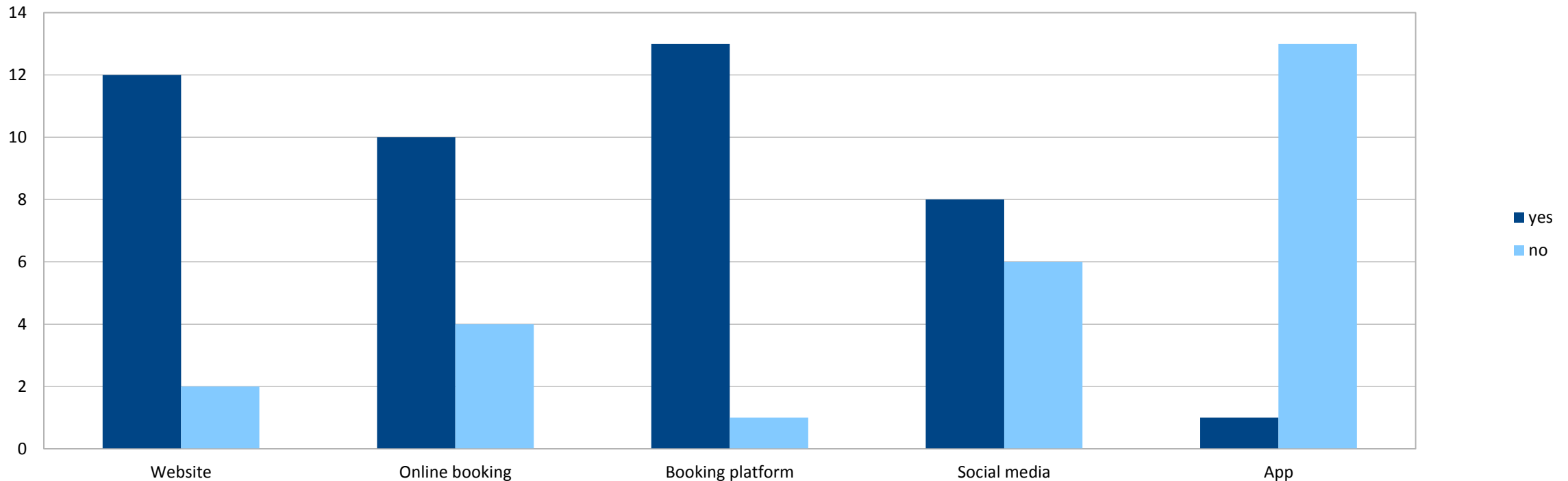
Public infrastructure (conference center, museums, tourism office)



Source: own survey based on desk research with data researches on online platforms (Tripadvisor, Booking.com, Ticketmaster.de, Google Play Store).
Note: Restaurants as well as hotel in-room apps are not considered.

Tourism digitalization in Rosenheim: The status quo (2/3)

Hotels



Source: own survey based on desk research with data researches on online platforms (Tripadvisor, Booking.com, Ticketmaster.de, Google Play Store).

Note: Restaurants as well as hotel in-room apps are not considered.

Tourism digitalization in Rosenheim: The status quo (3/3)

- Most hotels have websites and offer direct online booking, but ease and quality vary considerably
- Most hotels are present on online booking platforms
- Attractiveness of websites and availability of add-ons (e.g. 360° pictures) vary considerably
- No city guide app
- Probably no enhanced-experience app in museums or conference center
- No virtual travel offers for the destination
- Almost no apps offered

Digitalizing retail: a few thoughts on a big challenge

- Large online retailers pose a challenge to retail SMEs
 - Online platforms enable market development but exercise strong market power
 - Personalized service is insufficient to keep retail SMEs competitive
 - Reterritorialization of the shopping experience may be a partial answer (e.g. festivals or open-air markets)
 - Digitalization offers opportunities for retail SMEs that cleverly combine personal service and digital efficiency
- ⇒ But precisely how to do so?

Recommendations for the case of Rosenheim: Digitalizing tourism (and retail)

- Increase the guest experience in public tourism infrastructure (conference center, museums, exhibition center) with apps or virtual reality
- Establish a flagship platform by combining virtual travel, enhanced experience solutions, and personalized service
- Example: virtual museum on the city's medieval history combined with guided tours, complementary self-guided tour apps, thematically aligned special packages in hotels, restaurants, and stores, and specifically themed events (e.g. festivals, open-air theater, medieval open-air markets)

Recommendations for the case of Rosenheim: Promoting technology diffusion (1/2)

- Set up a technology transfer center at the Technical University of Applied Sciences specifically dedicated to service digitalization and related cross-cutting themes (e.g. gamification) with multi-disciplinary competences in service management, marketing, health and IT
- Raise funds from private and public (e.g. ERDF) funds
- Set up a unit for applied research to tap into international trends and participate in international R&D projects on service digitalization (e.g. under Horizon 2020)

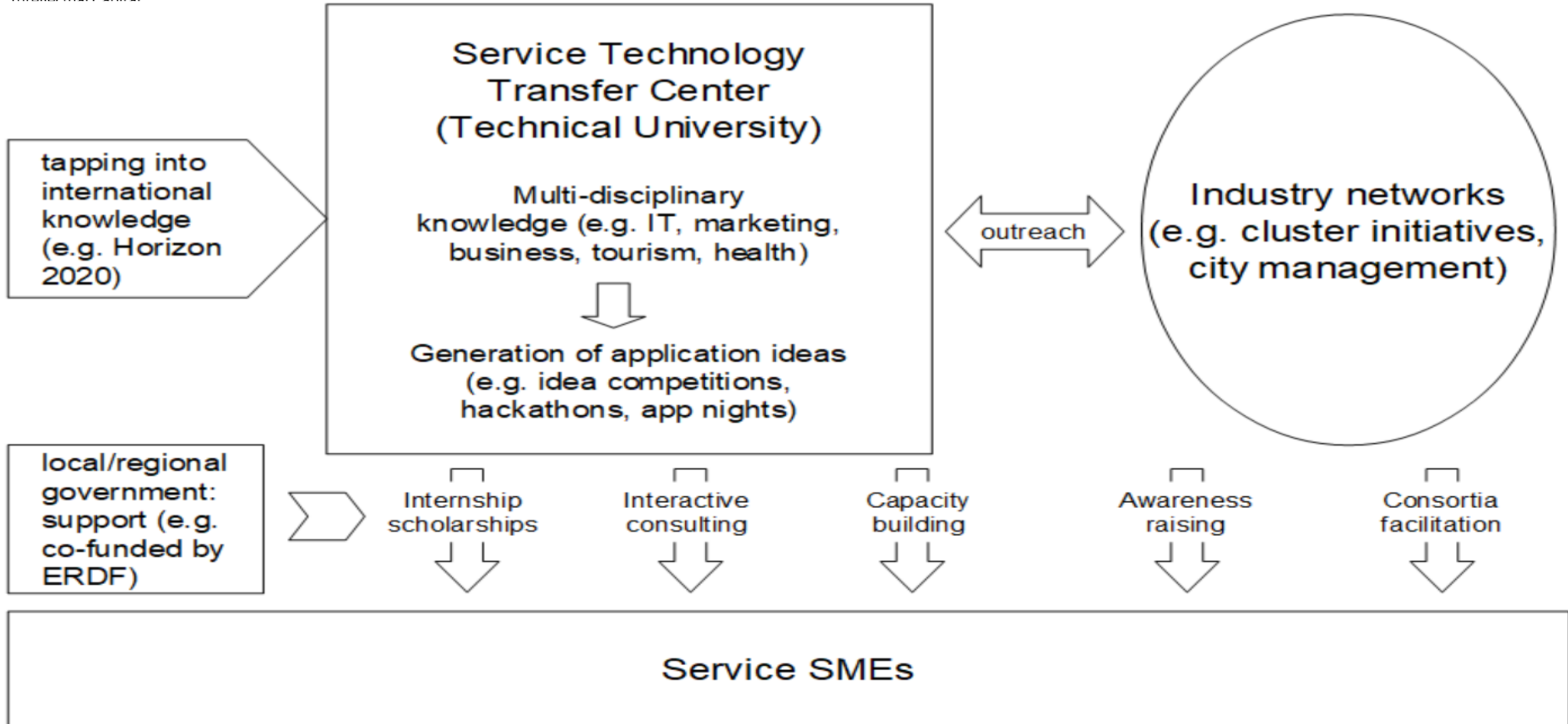
Recommendations for the case of Rosenheim: Promoting technology diffusion (2/2)

- Stimulate creativity on service digitalization, e.g. through student idea contests, app development nights, hackathons, or a co-working space for students and entrepreneurs on the university campus
- Set up capacity-building programs for service SMEs
- Offer consulting for service SMEs with a built-in feedback loop (possibly leading to interactive learning)
- Promote the diffusion of digital technologies to service industries through scholarships for specifically dedicated student internships in service SMEs
- Objective: generate solutions in applied research and through interactive learning, and diffuse them to service industries through capacity building, in-depth consulting, and the labor market

Recommendations for the case of Rosenheim: Facilitating service SME digitalization

- Raise awareness for the importance of service digitalization among SMEs, e.g. through events and good-practice awards
 - Use existing IT cluster initiative for diffusing IT innovation to service industries
 - Help service SMEs in finding joint digitalization solutions, e.g. through collaboration in a possible tourism cluster initiative or in existing retail cluster initiative
 - Maybe facilitate the setup of digitalization consortia between SMEs (trust building)
 - Set up capacity-building schemes for service digitalization and team up with neighboring regions with strong tourism and retail industries (Austria), e.g. under an Interreg project
- ⇒ Cooperate with strong competitor regions to face common challenges

A scheme for technology transfer to service sectors



Conclusions and generalized policy implications (1/2)

- Caveat: digitalization is not an end in itself!
- Policy should not actively promote labor-substituting technology uses (e.g. beware of pure self-guided tour apps without complementary personalized service offers)
- Instead, policy should support clever combinations of labor and technology
- Objective: keep the labor intensity of services but increase their labor productivity through technology by creating added value for customers and by building new markets

Conclusions and generalized policy implications (2/2)

- In tourism, policy can play an active role in digitalization by adding value to public tourism infrastructure (e.g. conference centers, museums) through experience-enhancing digital offers
- Parallel to public physical infrastructure, tourist destinations need public digital infrastructure
- Collaborative support structures such as cluster initiatives or other institutions for collaboration can be useful for overcoming barriers to service digitalization among SMEs
- Setting up these collaborative structures needs public support and trust-building (hence, policy support to institutional change)

Thank you for your attention!

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