



## Case study

## Sustainable development of industrial heritage tourism – A case study of the Industrial Monuments Route in Poland

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## ABSTRACT

The main goal of our research was to identify, characterize and discuss the main types of business models that can be found in touristic heritage sites that have been transformed into such from former industrial facilities or were newly created to pass on the heritage values. The research is a continuation of our study that started in 2017 on Polish touristic sites, that are associated on a touristic route – *Industrial Monuments Route of Silesian Voivodeship*. This route is located in southern part of Poland and it is the largest industrial route in the country. Our research revealed, organized and complemented the different types of business model transformation that took place in the analysed sites, among them is the post-production organization model which is the most frequently occurring one. This model applies to touristic ventures or cultural institutions that are former production or extraction facilities. Thanks to the transformation of those sites they suite now to fulfil their new touristic function, even if originally they have been designed for other purposes. The use of such transformed business models has also proven itself as an effective and in many cases the only way to preserve and save cultural heritage from degradation.

## 1. Introduction

The global economy has drastically changed since the second half of the 20th century to the present day. As was first noticed by [Touraine \(1971\)](#) and then popularized by [Bell \(1974\)](#), society has moved to a post-industrial stage, where services overwhelm production with regard to generation of wealth, number of people employed and the shift from mass production to individual production. In such circumstances the functioning of modern society is based on knowledge, which has become a valuable resource. Therefore, today's development and economic growth depend mainly on innovation and the creation of new ideas. The described changes brought an end to the industrial era and then the post-industrial era started, which rapidly advanced thanks to the vast development of IT services at the break of the millennia. Some researchers refer to these milestones as the third technological wave ([Toffler & Alvin, 1980](#)), recognizing its main characteristic feature that distinguishes it from the previous ones (the agricultural and industrial eras) – its effects are noticeable in the whole global economy nearly immediately.

However, this rapid change has its downsides of an economical and

sustainable nature. Since the change occurred over the course of only few decades, a lot of infrastructure and areas of life have not had enough time to adapt fully to this change. This resulted in the creation of post-industrial landscapes filled with remains of the past like old mines, drifts, abandoned factories etc., that scare the landscape and lower the security level of local societies who live in near proximity of them.

The described processes have also affected tourism, by creating space for a new type of heritage tourism to emerge – one that focuses on the industrial past and is built on it. We noticed that one can distinguish different scenarios about how such sites are created. Firstly, some of these tourist sites are still functioning as industrial plants, but they have extended their offer by providing tourist services (mainly tours where visitors can see some historical production lines and compare them to modern ones) – so the two functions are carried out side by side. Secondly, in some cases the touristic function, that at the beginning was only an addition to normal production, takes over and becomes the primary product of an enterprise. If something like this happens, a former industrial plant changes into a post-industrial site. An example of such facilities are old mines, where the resources (silver, copper, hard coal etc.) have depleted or extraction ended due to it being unprofitable.

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And lastly, a portion of those facilities can transform into tourist attractions, where the provided service is focused on presenting regional heritage. On sites of this type, both non-material (ideas, tradition, history, habits) and material (facilities, machinery, old technology) values are reused to create a touristic product, which makes for a positive contribution to sustainable development.

Each different type of these touristic sites roots back to their industrial origins, but they differ completely in the process of how they have become what they are today. Therefore the aim of the paper was to identify the types of transformation that lead to the creation of post-industrial tourist sites and to conceptualize them as models. For this purpose we used the Industrial Monuments Route (IMR) as a case study. IMR with 42 post-industrial tourist sites is the largest post-industrial thematic route in Poland, and is also part of the European Route of Industrial Heritage (ERIH). The identification of such models should provide a better understanding of how industrial heritage can be offered to tourists from the perspective of the value of the proposal in the concept of business models. Additionally, our findings could contribute to the studies of business models by supplementing them with the unique characteristic of tourist organizations which variate from other businesses and are characteristic only for tourism. Such models could be applied in other areas that are in the early stages of tourism development and where industrial heritage could be a valuable asset that might otherwise perish. For that reason, our research also contributes to the field of sustainability.

## 2. Post-industrial tourism as part of cultural tourism based on heritage

Post-industrial tourism can be perceived as a specific type of cultural tourism which is based on heritage related to the industrial past. In previous decades, heritage not previously considered traditional tourism heritage has gained more and more importance in tourism, and its potential has been appreciated (Timothy, 2018). Heritage itself can be treated as part of the whole human culture (Kopaliński, 1989), including national identity (Yu Park, 2010) and all things that are inherited from the past, that are used today and will be passed to new generations in the future (Mikos von Rohrscheidt, 2008). Thereby, all travels that focus on experiencing heritage are also part of one of the most rapidly developing forms of tourism (Marcinkiewicz & Kowalski, 2012), namely cultural tourism.

The distinctive characteristic of cultural tourism is the tourists willingness to explore, discover and learn things about humanity's existence and its creations (Panich, Maneenetr, Kunarucks, & Sakolnakorn, 2014) (Christou, 2006). Additionally, the main aspect of cultural tourism is that it is based on human perception, or, as named by other authors, a part of experiencing tourism (Hall & Zeppel, 1990). Cultural tourism and heritage tourism in particular, also play an important role in sustainability, sometimes being the only measure to preserve and keep heritage from degradation, for as long as possible in the most authentic form (Garrod & Fyall, 2000; Wells, Manika, Gregory-Smith, Taheri, & McCowlen, 2015; Yu Park, 2010).

Without a doubt, heritage can be a sensitive issue. Zhang (2017) points out multiple sources of potential conflicts to which tourists will be exposed, like: religious differences, ethnic clashes or political rivalry. But at the same time heritage that originates from the culture and history of a country is an important factor in tourism development in that region, as noted by Ismagilova, Safiullin, and Gafurov (2015). This group of researchers investigated the tourist market in Russia, finding that heritage can be used to enhance both the economy and the socio-cultural status by establishing or revitalizing sites that present heritage (this at the same time being evidence of a creative approach undertaken by the local community and which promotes their culture this way). Based on this, one can say that there is a link between heritage and socio-economic development (Ursache, 2015). Another study by Alazaizeh, Hallo, Backman, Norman, and Vogel (2016) showed that in

the case of heritage tourism preservation is one of the most important values for tourists when they are aware of it, and place it over values of use. Generally, the tourist experience is the main value for tourists and it influences behavioural intentions, especially the intrinsic benefits that tourists gain (Chen et al., 2013), making the tourist perception of a product the main determinant of its value (Ross, Saxena, Correia, & Deutz, 2017; Vargo & Lusch, 2004).

Ursache (2015) described heritage in the scope of geography and observed that among elements determining the touristic attractiveness and competitiveness of a country heritage is one of them, alongside with natural resources and climate. Entities that base their operation on cultural heritage should seek to establish financial independence. Surugiu (2015) underlined this, in the scope of supporting entrepreneurship related to heritage. In this context, it is worth mentioning that heritage does not only improve the chances for success in the economic area but it also sustains social identity. Therefore, some authors (Meng, Wei, & Yu, 2011) claim that the unique social value of heritage is sufficient reason to protect and maintain it, leaving financial aspects aside.

Garrod and Fyall (2000) define heritage tourism as tourism that is focused on things that are inherited, regardless of the kind of heritage (from historical buildings, through craftsmanship, to landscapes). However, this interpretation is not commonly accepted, for instance, Poria et al. (Poria, Butler, Airey, 2001, 2003) criticized it, stating that heritage tourism is not about the attributes of a place but it is rather a matter of tourist motivation. Regardless of this dispute, many researchers share the opinion and definition formulated by Yale (1991), treating this kind of tourism as "nothing more" than tourism, that focuses on everything that was inherited (meaning it can be anything from buildings, art or landscapes; McCain, Ray, 2003).

To sum up the discussion on heritage tourism and cultural tourism, one can conclude that they are closely linked. One should also note that heritage tourism has been at its peak since the beginning of the 21st century, and one can consider tourism to be "a heritage producing machine" (Gravari-Barbas, 2018) that shapes heritage to the demands of the modern traveller standards ("a world of free traffic, transactions and generalized mobilities").

Industrial heritage is a unique type of heritage that relates to the industrial part of a region. Many modern cities still have reminiscences of their old industrial function, which has permanently changed their landscapes, in the form of old plants, factories, mines, etc. Those structures are the traces of human history that document the technological and technical progress that took place, and as such they naturally awake tourist curiosity and are the source for their cognitive needs (Jędrzyak, 2011; Su, Bramwell, & Whalley, 2018). Post-industrial tourism is particularly interesting because of the two main types or recipients it addresses. Those are regular tourists that find interest in this topic, but also local communities, who have been living for generations in a region and whose ancestors used to work in a former industrial facility that now functions as a tourist attraction. The traditions and customs that were born in relation to those workplaces are an integral (and the non-material) part of this heritage, just as behaviours and ethics that were customary back then. Those elements still constitute a large portion of regional identity and have become more and more popular among tourists since the transformation from heavy industry into tourism began at the beginning of the '90s in Europe, and more and more of these sites were inscribed into the World Heritage List by UNESCO (Timothy, 2015).

Tourism that evolved around industrial heritage regions has many definitions. Even the defined phenomenon was given various names, like: post-industrial tourism, industrial tourism, industrial objects, cultural tourism, and industrial heritage tourism. However, the term industrial tourism is the most commonly used one (Otgaard, 2011). Kronenberg (2007) proposes to treat industrial and post-industrial tourism separately. In this approach industrial tourism relates to tourist activity that takes place in production facilities that are still active, for educational and cognitive reasons, while post-industrial tourism

concerns travels to decommissioned plants and former industrial regions.

The main topic of debate on heritage tourism that can be found more frequently than theoretical references in literature is the theoretical and empirical context. For instance, [Yanfang and Yinling \(2012\)](#) focused on examples (mainly from the Ruhr region in Germany) that show how the re-use of post-industrial areas contributes to economic development. In another paper, a team of researchers ([Merciu, Merciu, Cercleux, & Drăghici, 2014](#)) underlined the importance of maintaining industrial heritage from an economical perspective. The meaning of industrial heritage is also significant when it comes to revitalizing cities. Industrial areas that can be adapted for touristic purposes can be used as tools for economic development and restructuring a region ([Ćopić et al., 2014](#)). [Ćopić et al. \(2014\)](#) also noticed that the touristic function implemented there has a positive impact on sustainable development and that it can be used for protecting industrial heritage and revitalization. One should also bear in mind that industrial heritage can be used for many purposes and functions, but as [Vukosav, Garača, Čurčić, and Bradić \(2015\)](#) stated its main role in community development relies on the priorities and needs of its representatives. The same authors also claim that revitalization projects are based on partnerships within a sector, and in order to implement them cooperation and engagement are required, both from the private sector and from the state. Local authorities are of key importance in such processes because they assess projects in terms of potential gains for their city and decide which of the projects will attract the best investors. This was also highlighted in studies that focused on heritage tourism development from the economic geography perspective, which requires three conditions: innovative customers, new capital from enterprises and favourable policies from the government ([Mitchell and Shannon 2017](#)).

Various examples of tourist industrial monument routes are presented in the literature. From them, one can conclude that when industrial heritage gets protected and is made available to a broader audience by tourist enterprises, the touristic interest in it grows. There are many causes for that, like technical values, unique architecture, sentiments, or just the originality of that heritage. Therefore, if it is made available to the public, a tourist attraction emerges from it. Nevertheless, the transformation from an abandoned industrial facility into a tourist attraction is a complicated process that consumes a lot of resources, mostly financial, but also requires adequate solutions from a management perspective, which is based on carefully constructed business models.

### 3. The concept of business models – definitions and approaches

Even though the business model concept has been described in the literature on many occasions ([Osterwalder et al., 2010](#); [Teece, 2017](#)), the way it is understood varies depending on the individual approach or on the way portioners and managers use strategic tools. The tourism sector is not different in this matter, and there are not many cases of well-thought-out and clear designs for a business model. Nevertheless, one can also find examples among companies that possess unique and effective business models that were created by people with no education in management – showing that specialized knowledge is not always necessary to come up with a successful business model. This is possible because most businesses begin with a more or less formalized idea that originates from the founder's experiences. However, one should not forget that the thing which allows for the avoidance of mistakes is the awareness of the importance and significance of each step that is necessary to create a business. Therefore, it makes this awareness a significant part of business creation, and it allows to avoid errors, and sustain on the marked while gaining competitive advantage.

There are multiple forms of how business models can be expressed and how the connections between their components are drafted. They can take the form of synthetic business descriptions ([Magretta, 2002](#)) or they can be perceived from the utilitarian perspective as tools ([Teece,](#)

[2017](#)). A business model in the tool perspective are the relations (and their characteristic) between the elements of an organization that cause its development and lead to value capturing ([Battistella, De Toni, De Zan, & Pessot, 2017](#)).

Humankind has been formulating business plans already in the ancient times. However, the moment people started to name this process can be dated back to the second half of the 20th century ([Bellman, Clark, Malcolm, Craft, & Ricciardi, 1957](#); [DaSilva, Trkman, 2014](#)). Initially, the term business model was only used in business games and had no meaning in management. The first mentions in the managerial context can be found in the literature that dates back to the mid-70s of the last century ([Wirtz, Pistoia, Ullrich & Gittel, 2016](#)). This happened first when [Konczal \(1975\)](#) suggested that business models are not only scientific tools but they also have managerial value. A decade later, in the '80s, the dominant logic approach and the mental map of a company (and the road map that is a its result) emerged – they allow to cover the logic behind achieving success through resource usage ([Prahald, Bettis, 1986](#)).

The concept of business models in tourism is a rarely raised subject in the literature ([Szromek, Naramski 2019a](#)). Most of the researches that can be found focus on selected components of a business model, like: relations with customers ([Montaguti & Mingoto, 2016](#)), innovation ([Souto, 2015](#)), building cross-organizational networks ([Ciurea, Filip 2015](#)) or creating value for the customer ([Budeanu, 2012](#); [Cranmer & Jung, 2017](#); [Havemo, 2018](#); [Prebensen, Vitterso, & Dahl, 2013](#); [Szromek & Wybrańczyk, 2019](#)).

However, there are interesting examples of discussions on business models in the catering and accommodation services. [Diaconu and Dutu \(2014\)](#) investigated how the hotel industry develops in the direction of innovative business models. To name another example, [Langvinienė and Daunoravičiūtė \(2015\)](#) identified factors that need to be considered while formulating a business model for the hotel industry, due to their impact on the future success of a company.

Smart tourism (ST) is an example of how knowledge can be used and applied to create a business model. In this concept, the value proposal for customers is the output of gathering and processing large amounts of information that is collected through applications ([Gretzel, Sigala, Xiang, & Koo, 2015](#)). The main concept of smart tourism is to generate knowledge from the gathered information, from which it is possible to identify tourist preferences regarding services. As a result, that knowledge gets transformed not only into new value proposals but also into individualized products, new communication channels and customized relations building.

An up-to-date definition of a business model by [Teece \(2017\)](#) says that it is a tool used for describing the architecture or designs of mechanisms that relate to value capture, supply or creation. Value for customers is the main pillar of every business model, therefore it should define how this value is captured by an organization, and in what way it encourages customers to pay for it (so it can generate profits). Other authors, like [Prendeville and Bocken \(2017\)](#), treat business models more like conceptual tools. In their opinion, such a model should describe activities in an enterprise. Those activities in a business model relate to transactions with customers, suppliers and partners, as well as to their role in capturing value and development. Another definition of a business model by [Geissdoerfer, Savaget, and Evans \(2017\)](#) is slightly different. It says that a business model is a simplified presentation that shows all elements of an organization and the relations between them, so it can be used for analysing, planning and communication within a complicated structure.

[Biloslavo, Bagnolii and Edgar \(2018\)](#) had a significant contribution to the theory of business models when they developed the value triangle. It illustrates the connections between the product, society and an individual, showing how three separate values are created (customer value, social value and partner value). This concept fits into the theory of sustainable business models; the value creation is accompanied by sustainable development, making it an issue that gains on popularity and is

often referred to by researchers (Lassch).

Osterwalder and Pigneur (2010) are the authors of a business model concept that is one of the most popular ones - it is called CANVAS. The model consists of 9 components that describe it, these are: proposed value for the customer, relationships with the customers, market segments, distribution channels, revenue streams, key activities, key partnerships, key resources and costs structure. The componential structure of this concept makes it possible to visualize the performance of an organization and its business model.

The CANVAS concept is sometimes criticized for its potential weakness. Since it is a static model, it lacks modification possibilities and experiment capability that could be utilized by some entrepreneurs. For this reason, in unstable or constantly changing economic conditions, dynamic models quite often gain the upper hand (Cosenz, Noto 2018). Dynamic business models are built by combining conventional business model concepts with dynamic system modelling (Mintzberg, 1984). Therefore, the value proposal in such models is created by mapping it into cause-and-effect relations. This allows for analysing the strategy and conducting simulations and experiments that show how an organization might react (regarding performance, value creation and innovation) to changes (in strategy or in the organization).

#### 4. Research details

Research was based on the previously presented literature review as well as on observations that were made on industrial heritage tourism enterprises (IHTE). The IHTE observations were made on objects from the Industrial Monuments Route (IMR). Based on those, as well as on the creation method of each IHTE, a typology of business models creation was made. Therefore, the main subject of the study was post-industrial tourism ventures located in Southern Poland that function within a formal tourist route which is governed by the local administration (it coordinates the route). The IMR was established in 2004 by the Marshal's Office of the Silesian Voivodeship. The main value of the IMR sites is the heritage from the industrial era that began at the end of the 18th century, mainly in the southern part of Poland during Prussian Partition (Naramski, Szromek 2019). As at the day of this publication, it is one of the largest thematic touristic routes in Poland (in terms of the number of sites that actively cooperate with each other under a common brand (Szromek, Naramski 2019b)). It associates 42 post-industrial sites that are highly diversified regarding their themes (from the Historical Coal Mine GUIDO, through breweries, adits, a Radio Tower in Gliwice, to a Museum of the Production of Matches, etc.). IMR is also the only route in Central Europe that is part of the European Route of Industrial Heritage (ERIH). Since the IMR was established the number of visitors has been constantly growing. The first measurement of attendance was made in 2009 and it revealed that the route has been visited by almost half a million tourists (467,999), and 5 years later it reached almost three quarters of a million (724,201) (Herman, Naramski, & Szromek, 2016). A good indicator of the growing popularity, and therefore the importance of the IMR for regional identity, sustainable development and preserving the region's heritage, is the event called *Industriada*. It is an annual festival organized by all IMR sites, with special attractions and deals (free or discounted tours, concerts, shows, gifts etc.). The first edition of *Industriada* took place in 2010 and it attracted 29,000 visitors. The last edition had three times more visitors with around 100,000 tourists (Naramski, Herman 2020).

The conducted research included direct interviews with industrial heritage sites' managers and case studies on sites that represent different types of facilities found on the IMR. This method was chosen because of the availability of various materials in certain sites, like: internal reports, detailed product offer descriptions, online resources. All of those sources were supplemented with feedback that we received during the interviews as well as our own observations. Prior to the conducted research an analysis of the literature and a query for documents regarding IMR sites took place. Another criterion for selecting given sites

was the diversity of business models that are implemented in those organizations. Afterward, the obtained data from documentation and interviews were used to identify the elements of a business model, following the Osterwalder and Pigneur (2010) concept, in post-industrial tourism ventures.

#### 5. Classification of business models in post-industrial tourist entities

The focus on industrial and technological heritage is what distinguishes post-industrial touristic sites from other tourist attractions. Therefore, based on this, we were able to divide the analysed ventures into three types (Szromek, Herman 2019):

- post-production tourist organizations (PPTO),
- production and tourist enterprises (PTE),
- tourist thematic organizations (TTO).

This classification is also dictated by the characteristic of a given site and corresponds figuratively with the place where tourist traffic takes place. Therefore, one can say that post-production tourist organizations are established within an inactive production site, whereby production and tourist enterprises combine tourism services with their industrial function that remains active. Tourist thematic organizations, on the other hand, present industrial heritage in locations that are not related to (or in other words do not originate from) the presented heritage.

The presented classification of business activity also defines the business model of an organization, and at the same time can be analysed in terms of the life cycle concept of the organization (Lester, Parnell, & Carraher, 2003), (Mintzberg, 1984), (Hanks, Watson, Jansen, & Chandler, 1994). In order to do so, we supplement the life cycle concept by introducing an additional stage – the transitional stage. In the case of a post-production organization, it is the stage when production has stopped and the transformation towards a new function (touristic) has started. In the case of production and tourist enterprises, the transition stage occurs when a new function (touristic) starts to be realized alongside normal production. During the study of selected sites and the changes they went through, it became clear that this moment of transition is defined by the time when the touristic function becomes the dominant one (or starts to develop in case of production sites still active). The application of the life cycle concept allowed us to identify the key stages of the emergence process of an industrial tourist enterprise that is based on industrial heritage.

##### 5.1. Post-production tourist organizations

Ventures that once functioned as industrial organizations are the base of operation for post-production enterprises. Therefore, one can distinguish two stages in the activity of such an organization. The period when production was the dominant function of a venture is the first one, and the second one starts when the touristic function becomes dominant (additionally one can distinguish an additional stage – that is the stage when tourism starts developing, but is still only a sub-function). Fig. 1 presents a model that captures this concept in a post-production tourist organisations (PPTO).

The analysis of the tourist sites on the IMR shows that during their first stage, most of the enterprises have been involved in production and service providing that was related to the extraction of natural resources (like coal) or the production of goods (matches, beer, textile, etc.). As this stage was coming to an end, an enterprise that was facing decommissioning had to decide about its future. It could be either liquidated and the whole (or main part) of its infrastructure sold or disposed of, or the equipment (as a whole or just partially) could stay maintained to fulfil a new purpose (in the context of our works that is the tourist function). If the second scenario takes place, where the infrastructure remains sustained and is made available for tourists, then the main

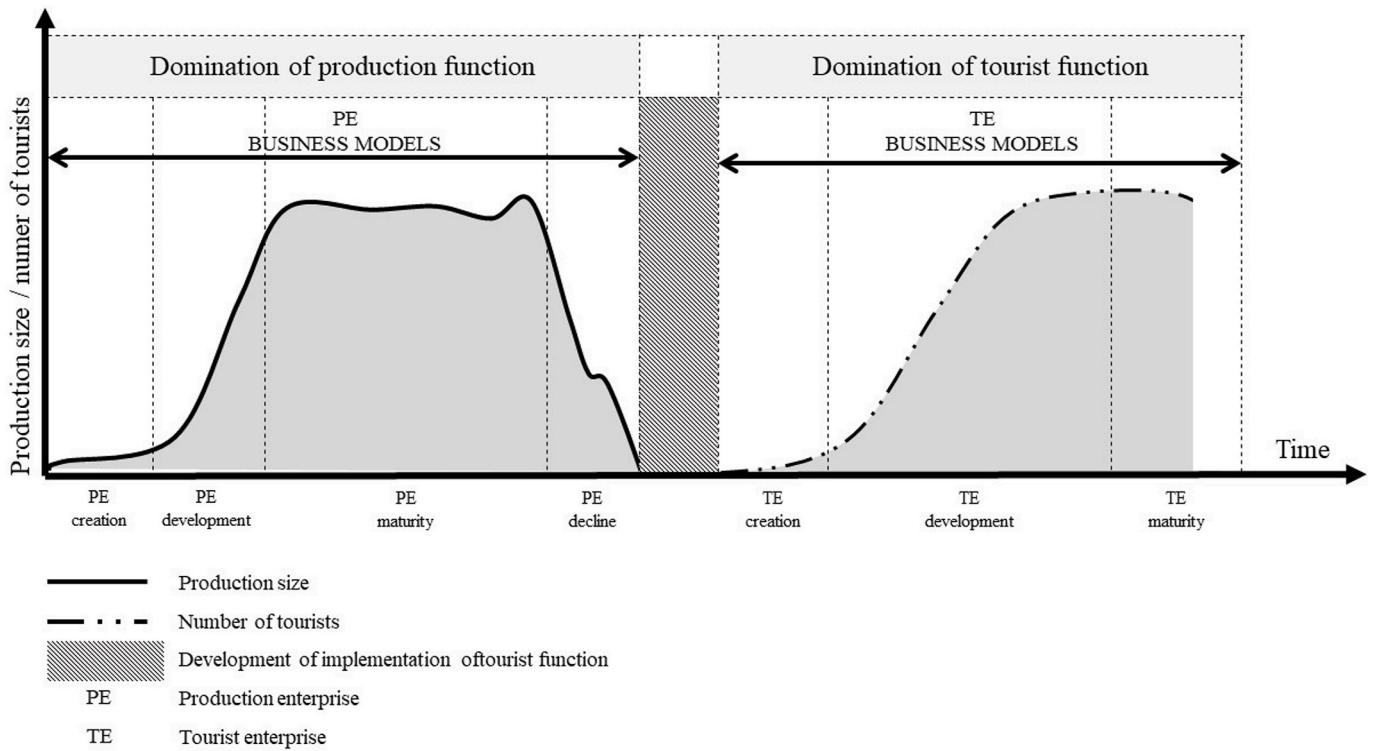


Fig. 1. The PPTO general model.

function of such an enterprise changes into a tourist function and a new business stage starts (making tourism the main source of income).

One can name examples of such objects on the IMR. The GUIDO Historic Coal Mine is one of them. Coal extraction ended there almost nine decades before it became a tourist attraction (museum) in 2007.

Industrial heritage from the 19th and 20th centuries was preserved at two levels of the former mine - the first is 170 m deep and the second 320 m. Nowadays, tourists can visit them by taking part in guided tours that start with the descent underground in an authentic mining elevator Guido Coal Mine, 2020. The Black Trout Adit is another example of an

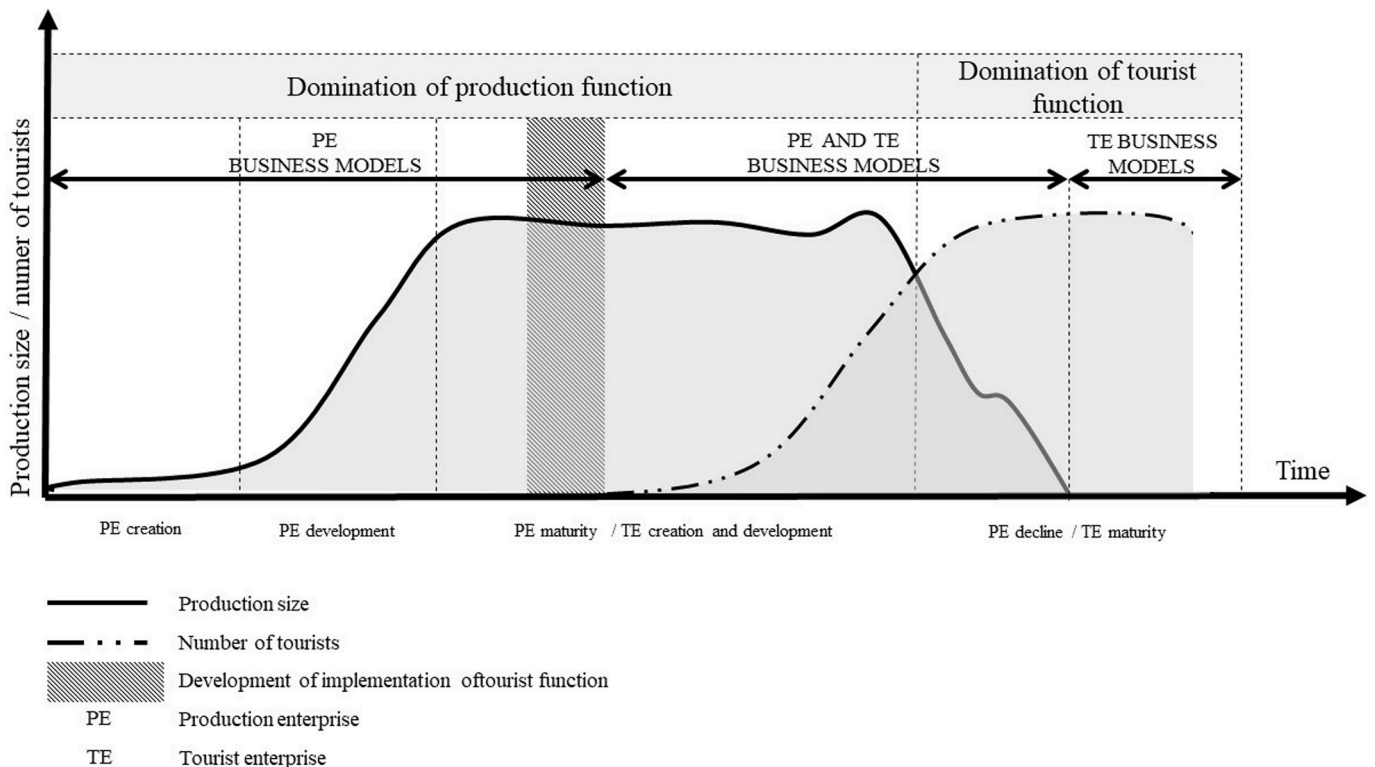


Fig. 2. The model of PPTO with delayed tourism function.

IMR site that has followed this pattern of transformation. The former 19th century mining facility is now part of the World Heritage Site List, and is also on the List of Historic Monuments.

It is worth noticing that when an enterprise transforms from the first stage into the second one its business model changes too. This is because during the first stage the operation is based on production, while in the second one it is based on tourist activity. Therefore, the key components of a business model like resources, value proposed to the customers, market segments and key activities are very diversified between those stages. There can be an additional stage or a sub-stage identified in the presented model. It concerns the period of transition between the two main stages and was defined as the *development of the implementation of tourist function*. This is the time when fundamental changes to the business model are introduced. Those changes include: deciding to focus on heritage as the main value proposal, the preparation of first concepts for making the heritage available to tourists, securing funds for the transformation, and selecting new management (in case there was an interruption of activity between the two stages and the old management is no longer available or does not have the required competencies to manage the object with its new function) or merging with another tourism-related entity.

In some cases, the implementation of a touristic function does not always come after the production has ceased. This idea can be introduced and implemented at a time when the production function is still active, so both functions overlap each other at a certain point of time. The model of such a function is shown in Fig. 2.

In such entities, the focus on the tourist function might only be delayed on purpose (dropping the production). In such enterprises, there are temporarily two business models that are executed parallel to each other. One of them focuses on the production of goods, while the second one is designed to support the service provision (for tourism). Sometimes those two might be combined in one integrated business model that covers both functions. In such enterprises, the value proposal is well-thought-out and maintained, and they are focused on providing this value for their end recipients: tourists and customers (of the production

goods) as well.

In case the business model is integrated and applies to two types of activity it can be built based on shared elements for both functions, like common resources, shared client segments, or by treating tourism as a supplement to the main productive offer of an enterprise.

Not every tourist enterprise that offers visiting authentic industrial sites has to be a venture in which production stopped or is about to be decommissioned. Some enterprises might try to combine both of these functions permanently, not putting tourism over production.

### 5.2. Production and tourist enterprises

Organizations that permanently realize the productive function alongside the touristic function and use both functions to generate revenue were classified by us as production and tourist enterprises (PTE). Just like in the previous case of post-production enterprises two main stages can be identified in the development process of such an entity. Just like previously, the first stage is the time when production was the dominant function. Later on, tourism is used to supplement the production offer and it stays in such a position, until at some point in time both of the functions become strategic activities. In Fig. 3 we present a model of a PTE.

One can distinguish two intertwined business models in an enterprise that realizes both the production and the touristic function. There is a production activity business model and there is also a touristic activity business model. Sometimes an enterprise might use only one complex model that applies to both areas of activity (tourism and production), but it will not be an integrated model. This is because the key components of a business model in the discussed enterprises will be different for every function. Nevertheless, it seems possible to prepare an autonomous model that includes shared resources for both activities but then distinguishes the differences between them and describes them separately. This might also be achieved by implementing the corporation separation concept. It identifies the activities related to customer relations maintenance, as well as to infrastructure and product

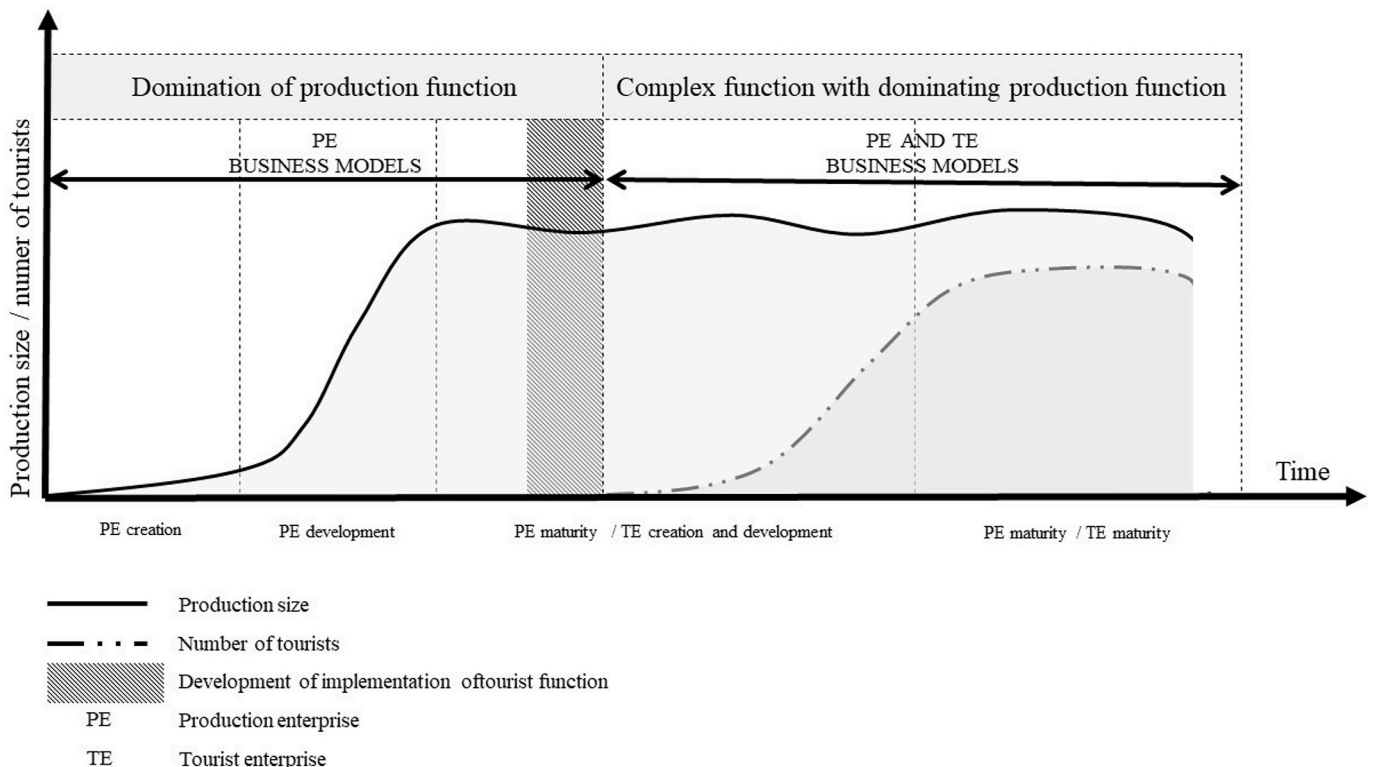


Fig. 3. The PTE model.

innovation development.

The analysis on IMR sites has shown that in the case of ventures in which there are two functions (touristic and productive) realized in parallel to each other, the business model for the production is the dominating one. The income generated from this function is the key source of financing and is a strategic resource. The best examples of such ventures on the IMR are breweries, in which additionally to beer production regular sightseeing tours are organized. Apart from sustaining production the two main breweries have also opened their own company museums (The Żywiec Brewery Museum and The Museum of the Duke's Brewery in Tychy). Tourists can learn about modern and historical brewing processes there, as well as take part in various workshops, demonstrations and presentations (The Museum of Tyskie Browary Książęce, 2020) (The Żywiec Brewery, 2020).

One can observe sometimes a particular case of PTE business models. It can be found in ventures where the dominant activity switches from production to tourism. In such a case the model is different in the second stage in comparison to the previous one. One can notice that at a specific moment the revenue from production starts to drop and the number of tourists increases, as shown in Fig. 4. There can be numerous reasons for the drop in production, like changes to the final product or even the restructuring of an industrial plant.

Another specific case of PTEs are former production plants that have been decommissioned, but after they were adapted for tourism the production has restarted thanks to it. One should note that even if the production restarts, most of the times it is only on a small scale to support the touristic function as a form of promotion or for demonstration purposes, offering an extended value proposal for tourists (Gravari-Barbas, 2018). Contrary to the previously presented models of PTEs, those ventures have only one business model that is strictly focused on tourism. In Fig. 5 we present what the model of such an enterprise looks like.

### 5.3. Tourist thematic organizations

Touristic thematic organizations (TTO) are the last group of entities among IMR sites. Those are art and culture institutions that present heritage in the form of thematic exhibitions. The key characteristic for them is that their activity takes place on sites that did not originate directly from the presented heritage (so they are not located in former industrial plants). Therefore, in their model, there is no timeline prior to the period of tourism that would be related to production, as shown in Fig. 6.

In TTOs tourism is the only function. The goal of those entities is to present heritage that was obtained from other sources and fits the thematic profile of the business. For industrial heritage, those are mainly sites that prepare exhibitions and provide access to museum pieces related to technology, tools, craftsmanship, machinery, etc., that date back to the industrial era.

One can say that TTOs are those sites where there are no (and never were) two factions. Therefore it is a separate type of entity that might fall into various categories of ownership or economic classification. To name an example from the IMR, the Central Museum of Firefighting (2020) in Myslowice is one of such sites. The museum is not a former fire station, nor is it a former industrial site, but it is part of the IMR because it allows tourists to learn how this type of citizen safety issue was developing and how it was tackled over a century ago.

Analyzing the above-mentioned models, an additional one was identified that is complementary to the TTO model, it is the Extended Thematic Tourism Organization model (ETTO). An increasing number of contemporary industrial heritage tourism enterprises expand their offer by products that allow tourists to feel like an employee of a formal industrial plant. In the Guido Mine, tourists change into miners' working clothes and during the tour, they take part in activities that are typical for mining work. At the Museum of the Duke's Brewery in Tychy, visitors test the beers after the tour. Some sites additionally offer creative workshops. The result of those is the creation of products that refer to the ones from the past (traditional products from the industrial era). It is

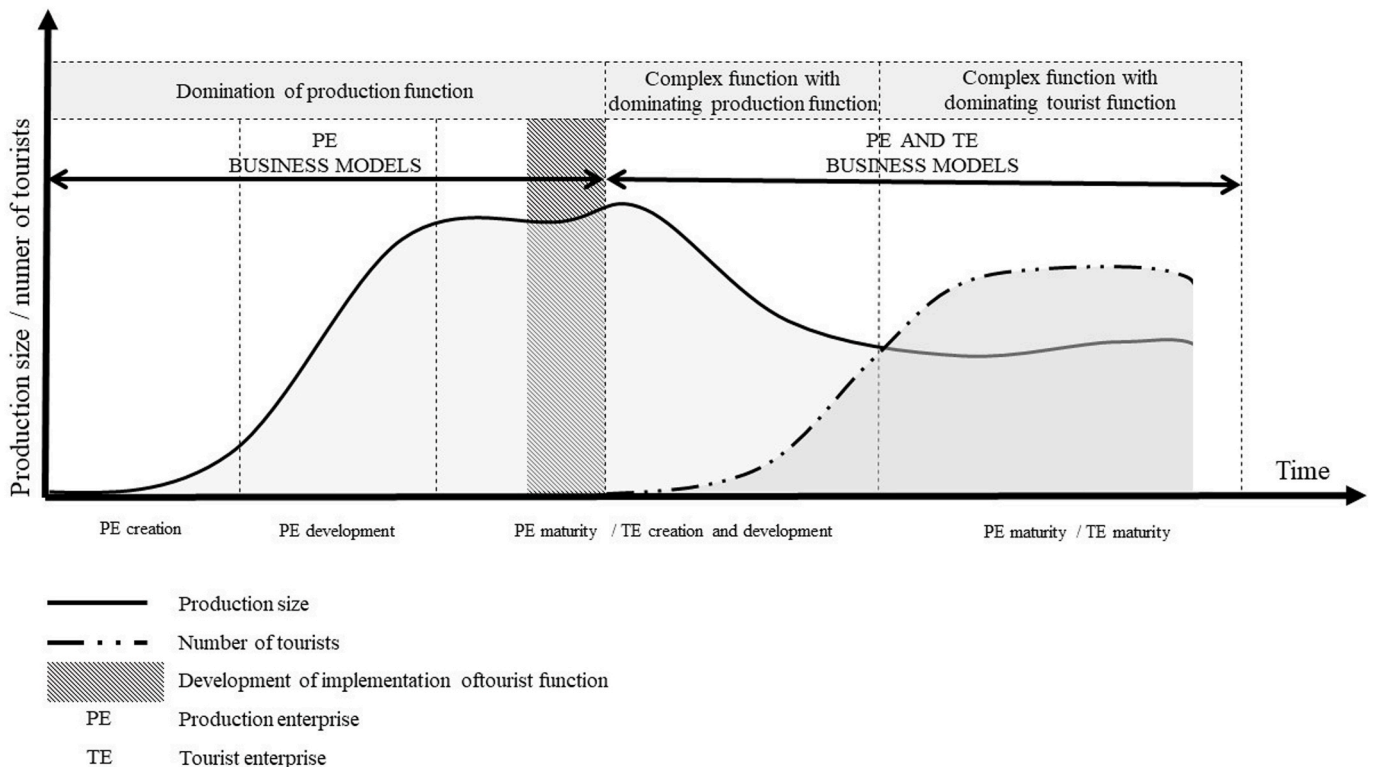


Fig. 4. The PTE model with the dominant tourist function.

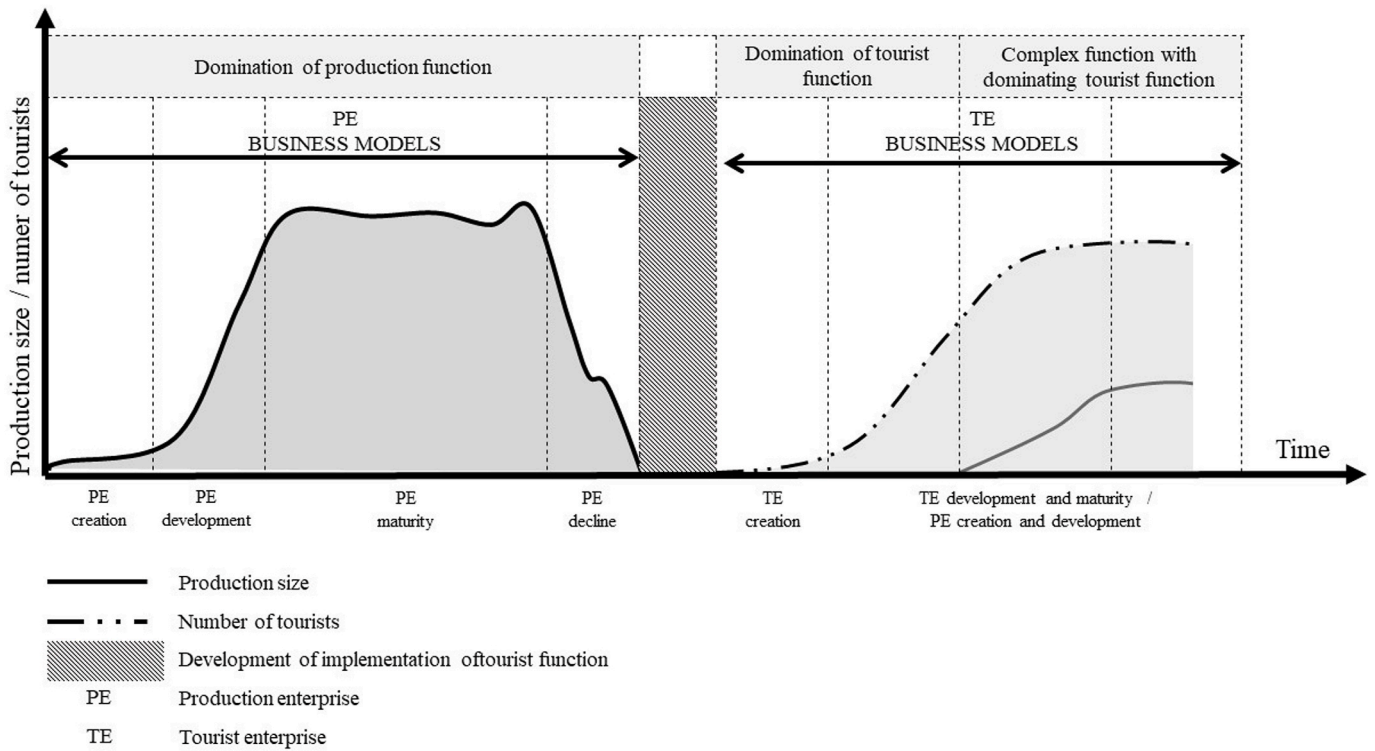


Fig. 5. The PTE with restarted productive function.

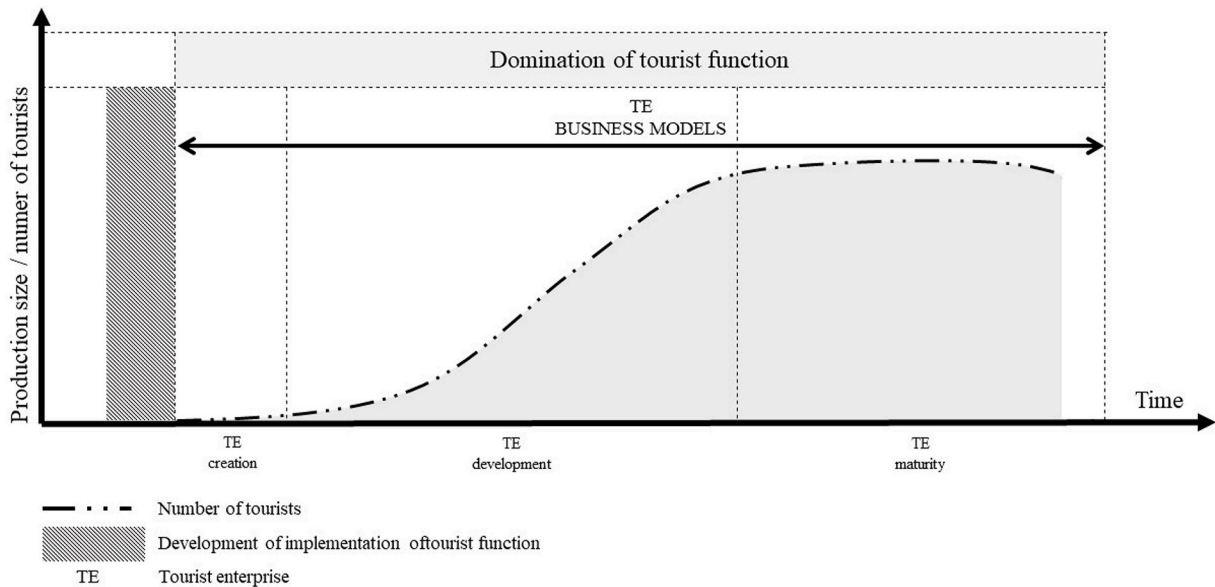


Fig. 6. The TTO model.

especially noticeable in thematic tourist organizations, which start additional production to attract new tourists. All this means that thematic organizations start to deal with production, even though they did not run it in the past. Examples can be found outside the IMR as well. Such type of activity is offered for example in the Museum of Printing and Paper Industry in Supraśl. As part of the workshops handmade paper is created (so it is a product that has never previously been created there because the museum is located in a commercial building). Products of this type can be bought by tourists as souvenirs or are free to take by the workshop participants. With the increasing demand for this traditional handmade paper, both the tourist and production functions are carried

out simultaneously. In contrary to the PTE model, in case of ETO the starting point for the implementation of production is the tourist activity. Fig. 7 presents a model that shows this concept in a tourist-production enterprise. This shows that it is possible for a company to find industrial activity more profitable. One might also assume that in some cases the tourist activity might become dominated by the production activity. However such unique cases have not been described so far, yet they may appear in the future.



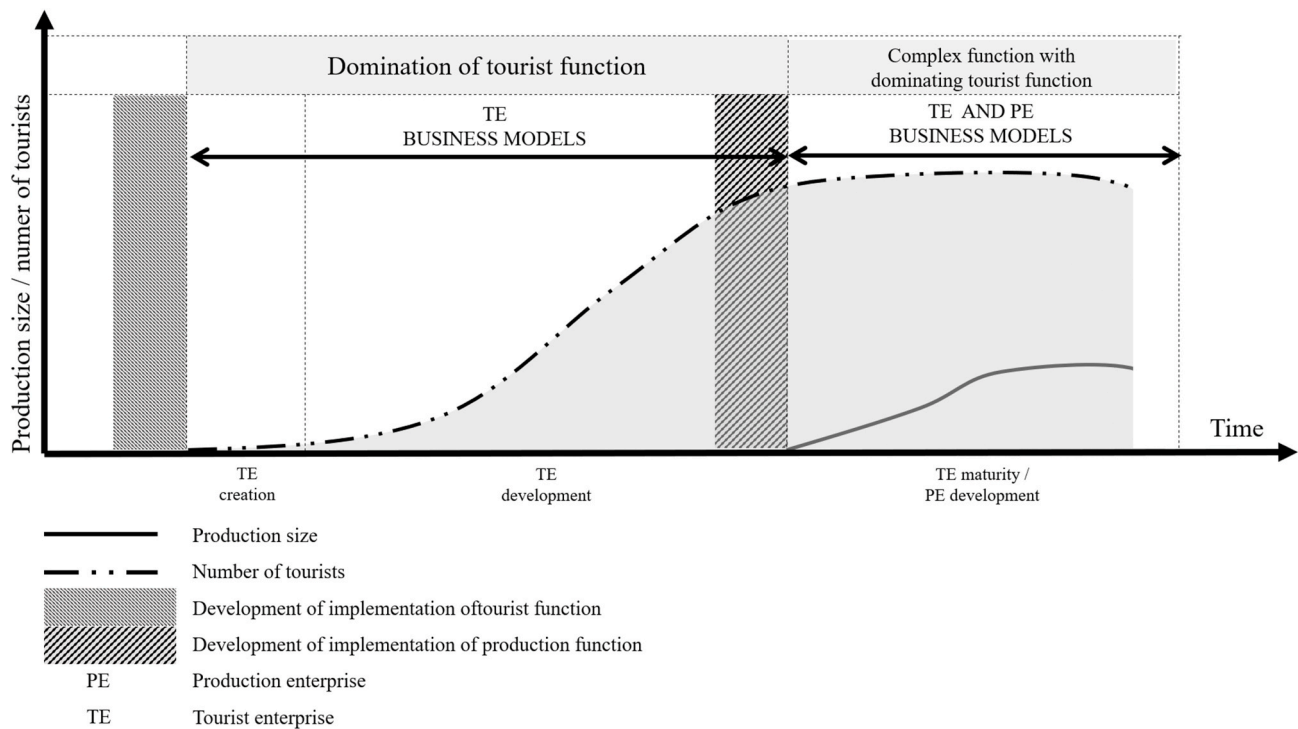


Fig. 7. The Extended Thematic Tourism Organization model (ETTO).

**6. Comparison of the main models of post-industrial heritage tourist organizations**

There are many differences between the presented models of post-industrial heritage tourism organizations. However, there are also

some important similarities. The components of a business model and their relations to each other are presented in Table 1.

There are some elements of the infrastructure that will appear in every model, such as old devices, objects and tools, as well as tourist routes. Nevertheless, every model is characterized by a slightly different

**Table 1**  
Exemplary elements of components for business models.

Components	Post-production tourist organization (PPTO)	Production and tourist enterprise (PTE)		Tourist thematic organizations (TTO)
		Production (PE)	Tourism (TE)	
Infrastructure				
Key Activities	Activities aiming to adjust the routes and exhibitions to the traffic route and maintain high quality of service	Production activities	Separating tourist routes from production lines Securing mutual interaction of both activities	Acquiring museum pieces and creating thematic routes
Key Resources	Historic machinery and industrial devices, craft tools Routes in disused excavations Tradition and history of the plant	Production and transport base	Machinery, showpieces and routes Tradition and history of the industry	Showpieces, traditions, history
Partner Network	Guides and retired employees of the plant Hotel and catering industry Regional administrative unit	Suppliers Distributors Sellers Service	Guides Hotel and catering industry Regional administrative unit	Guides Hotel and catering industry Regional administrative unit
Offering Value Propositions	Learning about the environment where the ancestors worked Learning about the work ethos of the region Learning about the industry history Cultural experiences	Value resulting from the usability of products	Learning about the current work environment Learning about the past and present production process	Familiarizing oneself with the subject of sightseeing Cultural experiences
Customers				
Customer Segments	Tourists visiting this region Residents Educational institutions	Recipients (retail and wholesale) of production	Tourists and residents Educational institutions	Tourists and residents Educational institutions
Channels	Internet, local press	Internet, direct sale, advertising in media	Internet, direct sale, advertising in media	Internet, direct sale
Customer Relationships	Tourist – “guest” Making new attractions available gradually and periodically Creating new sightseeing programs	Improving the quality of goods and their distribution Establishing the brand and image	Tourist – “guest and potential customer” Brand creation	Tourist – “guest” Telling the story of the exhibition
Finances				
Cost Structure	Cost of post-production infrastructure and its adjustment Showpieces maintenance	Cost of production and sales chain	Cost of tourist route maintenance Cost of production safety Cost of promotion and servicing	Cost of thematic route maintenance Showpieces servicing
Revenue Streams	Revenues on tourist and cultural activity Subsidies	Sales revenues	Revenues on tourist and cultural activity Subsidies	Revenues on tourist and cultural activity Subsidies

Source: Szromek & Herman, 2019.

approach to the infrastructure. In the case of the PTEs, the PE model complements the TE model. Therefore, the PE infrastructure is bigger and requires more business partners as well as more activities. In the case of the PPTOs the resources do not narrow down to exhibits and museum pieces, but one of the key resources is the location – a former industrial plant with its authentic scenery (like an underground tunnel in a mine, or an old assembly line). It requires a lot of resources, activities and engagement from various partners (not only strictly business partners, but also from local and regional administration) in order to prepare and then maintain such an organization. Lastly, the TTO's infrastructure requirements are the smallest in comparison to other models. This is because they do not require specific historical buildings, and their exhibits are presented in specially made sceneries.

Value proposal is another aspect that differentiates the presented models. The main form of value proposal in all models apart from a TTO is cognitive value, but it is a bit different in every case. The main value of the offer of those entities is their knowledge of the history, as well as getting to know their own past, regional culture and overall heritage. Sometimes the value proposal in PPTOs and TTOs is extended by experiences in the form of cultural events (like concerts, meetings etc.).

The part of each model that is dedicated to the customers will always concern tourists, who can be understood as guests who want to satisfy their cognitive needs (making it the key task for employees who are related to providing the touristic services). However, in PTEs the touristic (sightseeing) route plays a special role. It is not only important for delivering the cognitive values but it also plays a major promotional role. This is because when a visitor learns about the production process and the manufacturer's history he or she may develop an attachment, not only to a certain product but also to the brand, resulting in more loyalty to the producer that "opened their doors" for the customer. Developing a customer relationship is of course also highly important in all other types of tourist organizations that are based on industrial heritage, for example by deepening and developing the route's connection with history.

The last element that differentiates the presented organizations and their models is the financial structure. This structure is not only dictated by the previously discussed costs but also stems from the revenues and sources of income. Some of the entities do not self-finance themselves through their products but rely on subventions from local administration, making their cultural activity the only source of financing (like in the case of public museums). The role of the state and local authorities is also extremely important, or even necessary, at the stage when a facility is restored and adapted for tourism after being decommissioned and unused for years or even centuries.

Another thing that one should note is that in the case of PTEs the costs of preparing and maintaining tourist activity is higher than in other types of touristic organizations because of tourist safety issues. It is a mandatory thing in still operational facilities or places that are of a higher risk than standard tourist sites (for example, a historic mine has to meet a lot more standards before it is allowed to admit untrained tourists into underground tunnels than for example a museum that shows exhibits in regular buildings).

## 7. Summary and conclusion

The industrial sector in Poland has undergone a lot of changes during the last two decades. Thanks to development and progress in technology, automation of production and extraction processes the industry has moved into new halls and buildings, leaving many of the outdated infrastructures behind. A large portion of those buildings have been demolished and some of them have deteriorated to an unusable condition over the years. However, some of them remained in a good condition, but had no application and have only been ruining the Upper Silesian landscape. Tourism turned out to be the only idea that would give them a purpose, make them useful again, and at the same preserve the heritage they equate to. Mining shaft towers that have been scarring

the once much more heavily industrialized Silesian landscape have become an identification mark of the new regional product – post-industrial tourism. Nowadays, the most valuable and important sites that present, secure and maintain the regional heritage are being unified and joint together under the Industrial Monuments Route brand. The IMR counts 42 sites as of the date of this article. All of them are located in the Southern part of Poland in the Silesian Voivodeship and originate from various industries.

In our work we presented, analysed and discussed three main types of business transformation that have been identified in the IMR sites. The most commonly occurring model happens to be a post-production organization. It was identified in cultural institutions and enterprises that had been factories or extraction plants in the past. Those places have not been designed with the intention of providing a location for tourism, however, thanks to the presented models of transformation they have been adapted to do so, and now they fulfil this function perfectly. It should not be surprising that this is the most popular model. First of all, in comparison to the TTOs, the PPT model is applied in authentic places, so they offer a higher value for the customers through their realistic representation of heritage. Of course PTEs offer even more in this respect by showing the real production process. However, in most sites, the production was decommissioned even decades before the touristic function was applied. It would be incredibly expensive to restore them to an operational state, and in many cases sustaining such a function would generate costs that could not be covered by tourism. Furthermore, because industrial tourism is based on heavy industry heritage, reactivating some historical (therefore out of date) production processes would be contrary to current environmental policies, or even impossible to realize due to a lack of craftsmen, operators, mechanics and spare parts that would be suitable for old technology. Finally, there are safety limitations, for example, it is not a problem for breweries to have guided tours go through selected parts of their production line, however, doing the same in a coal mine or ironworks would be of a much higher risk, and it would probably be impossible to demonstrate those processes to untrained visitors.

The presented transformations show a unique application of sustainability principles that preserve and make post-industrial heritage accessible. Therefore, one can say that tourism may be an effective means to preserve cultural heritage and save it from degradation for future generations. In order to do so, tourism has to be based on facilities that embody this heritage and this requires a specific approach of business model transformation.

The presented paper does not settle the issue of the efficiency of business models. It describes and identifies the most popular ones. Future studies could be supplementing our findings with an assessment of each model. On the one hand, this could be done by studying the visitors, and on the other hand by studying the model's effectiveness by taking into account the costs of operation, the social need to sustain the heritage and the quality of it. Furthermore, we assume that in future studies a wider spectrum of research subjects is needed, and it should concern other regions with rich industrial heritage like the Ruhr Basin in Germany or the Industrial Valleys in the UK. The research and authorship of this paper took place before the Covid19 pandemic. It would be both fascinating and salutary to repeat the exercise in, say, 2025 to establish how different business models responded to the crisis.

## Authors' contributions

Adam R. Szromek developed the methodology, introduction and conclusions, cited examples of post-industrial heritage tourist enterprises and compared the identified post-industrial enterprises transformation model types, as well prepared the final contents of the article and proofread and revised it. Krzysztof Herman reviewed the literature in terms of business models and proposed a division of post-industrial enterprises transformation models as well as prepared the characteristics of the Industrial Monuments Route in Poland. Mateusz Naramski

supplemented the literature review of business models, heritage tourism and the characteristic of the Industrial Monuments Route, proposed extensions to the introduction and conclusions as well as prepared proposed changes to the article in response to the reviews.

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