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Landscape and Geotourism: market typologies and visitor needs

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Abstract

Purpose: The purpose of this paper is to explore Geotourism (landscape tourism) in the context of the Irish tourism experience, to develop visitor typologies and propose an approach that will ensure greater sustainability by addressing market value and requirements through the use of marketing techniques and tools.

Methodology/Approach: An evaluation of existing geotourism resources and information was undertaken. A gap was identified in terms of marketing the Geotourism product. This gap is identified as a break the delivery of the experience to the most suitable customer and is addressed by identifying specific typologies, their requirements and making suggestions in terms of delivery. .

Findings: Four main markets are identified. Each has both positive and negative impacts on the tourism resource. However as the resource in the infancy stage of lifecycle, a number of suggested approaches may ensure a more sustainable path through its cycle. A more focused marketing approach and the creation of greater involvement with the site leads to greater value for both the visitor and the site and contributes overall to sustainability.

Research Limitations: The paper is conceptual. Application and empirical research is required to test the typologies and their requirements. It is envisaged that this could be undertaken through the members of the European Geoparks Network.

Practical Application: The findings could form an evaluative framework for areas of geological significance around which a product development and marketing strategy could be organized.

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Key Words: typologies, Geotourism, market orientation, values, involvement, sustainability

Type of Paper: Conceptual

1.0 Introduction

Why look at geotourism? The rocks that make up the earth's crust, that are the basis of our landscapes contribute in an enduring manner to the tourism resource. In Ireland, the Burren and the Giants Causeway come to mind as geosites. Internationally, the Niagara Falls and the Grand Canyon are sites based on geology that capture every imagination. Geotourism was identified by Hose (1995) as a niche product area suitable for the tourism sector. Hose described geotourism as 'the provision of interpretative and service facilities to enable tourists to acquire knowledge and understanding of the geology and geomorphology of a site (including contribution to the development of earth sciences) beyond the level of aesthetic appreciation'. Mention geology to the man or woman on the street and they may or may not associate geology with the study of rocks. As to their interest and knowledge, that is open to question. Geology however is the very foundation on which all our other natural resources are built. Rocks and stone are used to build houses, bridges, pavements, provide ornaments, are the basis for the vast number of soils which provide the essential structure for vegetation growth and hence the diversity of our habitats and ecosystems.. These in turn provide the range of environments or landscapes which are so often are the motivation to visit a destination. In 2006, 80% of all holidaymakers to Ireland considered the scenery as very important in their reason to visit the country. An unspoilt environment was considered as very important by 78% of all holiday makers. Ireland is fortunate in having a large number of different scenery types in such close geographical proximity, with the cliffs and rugged coasts of the west to the more benign plains of the midlands. Even the place names echo the surrounding geology and landscape such as Clon or Cloon (Clonmel, Clondra) which from the Irish denotes a dry meadow or place (Aalen 1997). However, does geotourism fit into overall tourism provision? and if so for whom is it an attractive resource? According to Hose (1995) and Robinson and Novelli (2005) geotourism can be considered part of the vast array of niche products being developed for tourists. The development of niche tourism experiences is an emerging trend which is influencing tourism development both in Ireland and abroad. According to Robinson and Novelli (2005) niche tourism can be related to any one of the following: geographical or demographic areas such as the Alps with their related activities; product related such as geotourism or gardens and customer related such as rock climbing or kayaking, which uses the natural environment.

2.0 Reason for the Study

In the tourism sector, there is an increasing propensity to shy away from mass tourism and its consequent impacts and issues, and to divide those resources, product and activities that make up the complexity of the business into segments. These specific niches further customize the experience for the visitor. A niche market is a segment –it is specialized. There are three stages in carrying out market segmentation: segmentation, targeting and positioning (Dibb et al 2001). Identified niche markets are easier to target, they can be identified, they are accessible and easier to measure; all attributes suggested of market segmentation. In terms of development, niche activities are easier to develop as they follow a specific path, a code of development and requirement based on market requirements and expectations. This paper will argue that though a niche approach is important in terms of identification of a specific product, the overarching approach should be one of awareness of potential and actual market (tourist) requirement in order to sustain the identified product. Niche products should also focus further on both targeting the potential consumer and their customers and seek to position themselves within the tourism sector. It discusses the approach that should be taken in relation to marketing of the geotourism resource concentrating on developing a typology for visitors to geotourism sites and their specific requirements. Niche markets tend to be small and specialized. There are positive associations with being small and specialized; less impact, interested visitors who have made a specific choice to experience the niche and motivated by the specific activity/place and therefore less likely to negatively impact the area. Also they are often willing to pay more as the required expertise (unless derived from self) can be costly to include for such experiences. These may contribute to a positive approach in terms of economic, environmental and social sustainability. Negative association of low critical visitor (or participant) numbers can lead to a lack of resources to operate and manage (including market) the experience and may warrant it economically unsustainable. This has been demonstrated over and over again with a number of specialized gardens in Ireland being an example. There is a fine balance between providing an experience that will cater for the specialized

groups, but yet is attractive enough to the more general visitor resulting in a positive experience for them and economic benefit to primarily the site and possibly the local population. Identification and classification of specific sites and their focused marketing to identified market segments will help to create 'market fit'. For some markets, a general integration of products into the fabric of place and destination will also increase the visibility of the niche products and activities creating an added value to the overall tourist experienced and giving greater variety - something which is increasingly sought in our present world. Failte Ireland Product Development Strategy 2007-13 has a primary focus of the environment and specifically in relation to this the development of sustainable experiences (p. 50) Innovativeness and vision are required in order to provide such products (p. 44) (Failte Ireland Feb 2007).

Geotourism has however been recognized in Ireland as a resource especially in the last decade though has primarily focused on the educational sector and its integration into other attractions/destinations has been the exception rather than the rule. These exceptions will now be discussed.

3.0 Conceptual Issues

Product availability and awareness

Internationally raw geological formations are the basis for some of the most spectacular natural heritage sites in the world, with many attracting significant visitors numbers. The hot springs and lunar landscapes of Iceland, Yellowstone National Park in the US, the Grand Canyon, the Hawaii Volcanoe National Parks are major internationally recognised tourist attractions based on geology.. Each formation is unique to the area and defines its heritage and character as well as creating an image which appeals to a wide spectrum of visitors each year.

Ireland, emerging from 2000 million years of geological building and history is now mainly a low-lying country with only 5% of the landscape above 300m. The rocks have discernible north-east to south west grain and a relief with both Caledonian and Armorican folding leaving legacies in the Leinster and Munster areas. Ireland possesses the largest area of Carboniferous limestone in Europe and it is this together with the temperate climate which produces the green carpet of Ireland - the Emerald Isle (Aalen 1997). The Giants Causeway www.giantscausewayofficialguide.com, due to its massive nature and unusual rocks formation has long been an attraction for visitor on the Northern Ireland coast. The site is recognised as a UNESCO world Heritage Site however visitors have bought their issues in terms of carrying capacity with negative impacts and erosion of the surrounding pathways. Visitor management strategies and plans have been developed to combat these issues.

Landscapes from Stone, a project funded by the Peace and Reconciliation Fund was one of the first forays of geology into the field of tourism. This project involved the both Geological Survey of Ireland (GSI) and the Geological Survey of Northern Ireland (GSNI). The GSI do provide a vast array of information on geology at their HQ in Dublin and through a website disseminate information those interested in the area. (<http://www.gsi.ie/everyone>). They recognise that geology or the study of rocks has to be simplified and made attractive if the general market is to engage and wish to experience the resource with Geotourism often referred to as the more recognised landscape tourism. A colourful booklet focusing on the geology of the border counties between Northern and Southern Ireland was produced for the Landscapes from Stone project and a marketing drive was undertaken to attract those interested in such a resource. Universities and other educational institutions were targeted and visits took place from the US the UK and Europe. However this project solely focused on one sector of the market; those that had knowledge or required knowledge in the field of geology..

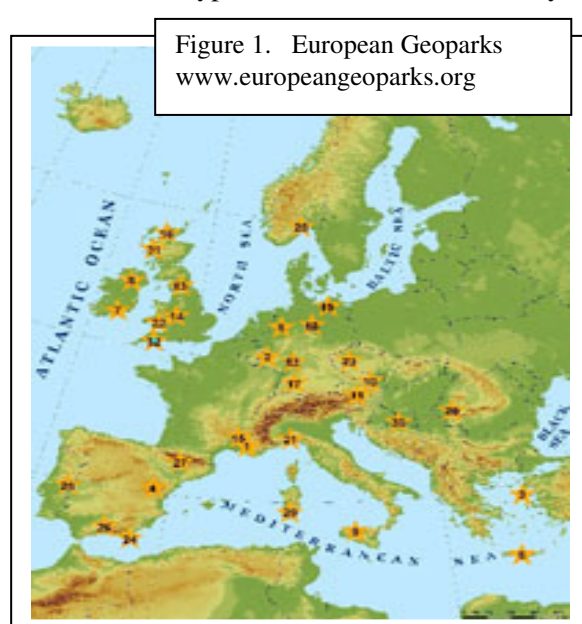
The European Geoparks initiative which is funded through Interreg III presently has a membership of 33 different sites. These sites are recognised as being of significant geological interest in Europe and each has a sustainable strategy which is supported by Europe www.europeangeoparks.org. Ireland has two geoparks and the Geological Survey of Ireland recently received funding to further develop the geoparks concept. The Marble Arch Caves are located in County Fermanagh www.marbelarchcaves.net and are marketed through both the GSI and Fermanagh County Council. Visitors are taken down into the caves and across underground lakes where they can view various formations such as stalactites and stalagmites.

The second geopark site in Ireland is the Copper Coast www.coppercoastgeopark.com which is located close to Bunmahon in County Waterford. Here, along with the natural history of the area, is the story of the copper mining industry and replicas of aspects of geological interest form a trail in an interpretive park atop the cliffs.

However links with other aspects of the environment and tourism experience still need to be made explicit in order that visitors view geology as part of their experience to the country.

The Breifne project www.breifne.ie is a good example where geology has been identified as an integrated element of the local environment. This project which was an initiative supported by a number of bodies including Failte Ireland, the GSI and the local authorities identified geology as part of the natural resource of the environment. The area has been packaged to attract visitors with links established between, the accommodation, activities and ancillary services in the designated area. The Green box, www.greenbox.ie Ireland only accredited ecolabelled ecotourism destination located in the North West of Ireland has also incorporated geology as part of their natural and tourism resource.

Close to the Greenbox, and on at local level the Arigna mines project has made huge inroads into creating a product which focuses on a former coal mine – the Arigna Mine and is now open to visitors. A unique element of this project is the attempt to maximize local benefit by employing former miners to lead tours and give talks. What better way to experience the visit than to hear the real stories of what it was like to work down in a coal mine. Another small min, Glengowla mine has opened up in the tourist honeypot of Connemara in recent years and attracts a number of visitors each year. This



also has a heritage centre and shop which includes geological specimens.

Due to the extensive limestone, there are a significant number of caves around Ireland such as the Ailwee Caves in the Burren, County Clare. This cave located in the centre of the vastness of limestone karst has integrated aspects of the geology with the story of the bears who lived in the caves several thousand years go. Various tourist facilities such as a restaurant and shop are on site and on the avenue leading up to the caves other associated outlets such as artisan food and craft outlets help to boost the local economy. The Mitchelstown Caves are less well developed in terms of tourism though offer some fine examples of limestone formations and artfully located lighting create an atmosphere which is again attractive to all market types.

Many environmentalists have looked at our rocky skeleton. Dr. John Feehan (University College Dublin) who has always been an advocate of environmental tourism focuses on Geotourism in his leaflet and short walk on the geology and landscape of the Silver River in Cadamstown, County Offaly. This simply demonstrates the rock skeleton using places of good exposure and the consequent ecosystems that have been built upon it and provides a pleasant two hours on a trip to the Slieve Bloom in the centre of the country.

The geological history of this country is vast. Other sites of note include the fossils of the limestones of the south east, the extinct Waterford volcanics, the Kerry Geopark near Sneem, the mica schists of the igneous uplands of the Wicklow mountains Ireland or the gold bought down in the river Liffey near Glenasmole in Co. Dublin. It is fortunate to have a great variety of formations within a relatively small geographical area which are a result of geological incidents such as mountain folding periods and climatic changes such as the two ice ages. Prior to defining a typology for this product, it is however necessary to consider the conceptual issues that play a part in this fit between the geotourism product and the visitor.

Conceptual Issues

Geotourism straddles between heritage tourism as landscapes (Hall and Zeppel 1990) and cultural tourism as per natural and social science (Seaton 2002). Heritage tourism encompasses a myriad of areas but can be broken down into natural and manmade heritage. The niche customer package profile for heritage tourism tends to be small group number, well managed, educational and upmarket. There is a focus on specialist markets which are identifiably segmented. Heritage tourism, whether in the form of visiting preferred landscapes, historic sites, buildings or monuments, is also experiential tourism in the sense of seeking an encounter with nature or feeling part of the history of a place' Hall and Zeppel (1990). There is a need for the visitor to be involved in the experience. The more knowledgeable the visitor is about the site, the more involved and interested they become – they engage. The site itself becomes more central to their decision making process and higher in their value sights. In terms of the site it needs to engage on different levels for the different markets and values. This engagement must reflect the level of involvement sought by the market. The different markets identified by the WTO (2003) are defined by a certain level of interest 1. the scholarly visitor 2. the general visitor 3. the student and 4. the reluctant visitor.

As with any resource it is essential once it has been identified and an awareness generated about its existence, that it will need to be managed in the context of impacts from visitors. The suitability of site to receive a visitor needs to be ascertained, whether there is a need or should be developed (and there is always argument on this) and issues such as access and ownership need to be considered. All visitors who visit natural sites due to the wide ranging impacts need to be managed. In order to encourage the right market and to ensure that the visitor is of benefit to the site, strategic marketing which uses the right message tools and distribution mix is essential.

Typology of Geotourists

In order to generate a typology of geotourists, it is necessary to consider all potential market types and requirements. The general market segment consists of group tours, FIT's, casual, education and day trips (something to do on a Sunday). Within this segment the group market require short and sharp stops with the required facilities (T and P), small amount of education, entertainment and ease of operational flow. Day trippers and families also require additional facilities such as places to eat, toilets, and places of entertainment (indoor and outdoor) to capture and keep the attention of each of the visitors. Other chance visitors (those who stumble across the site with little prior knowledge) require similar levels of facilities and there is a need to stimulate involvement with what there is at the site to engage the visitor. Certain sites can sustain and cope with number of visitors with management strategies in place. Others are less well known without management plans and require analysis of visitor impact. These impacts include physical, psychological, social, economic impacts and all contribute to the overall sustainability of the resource.

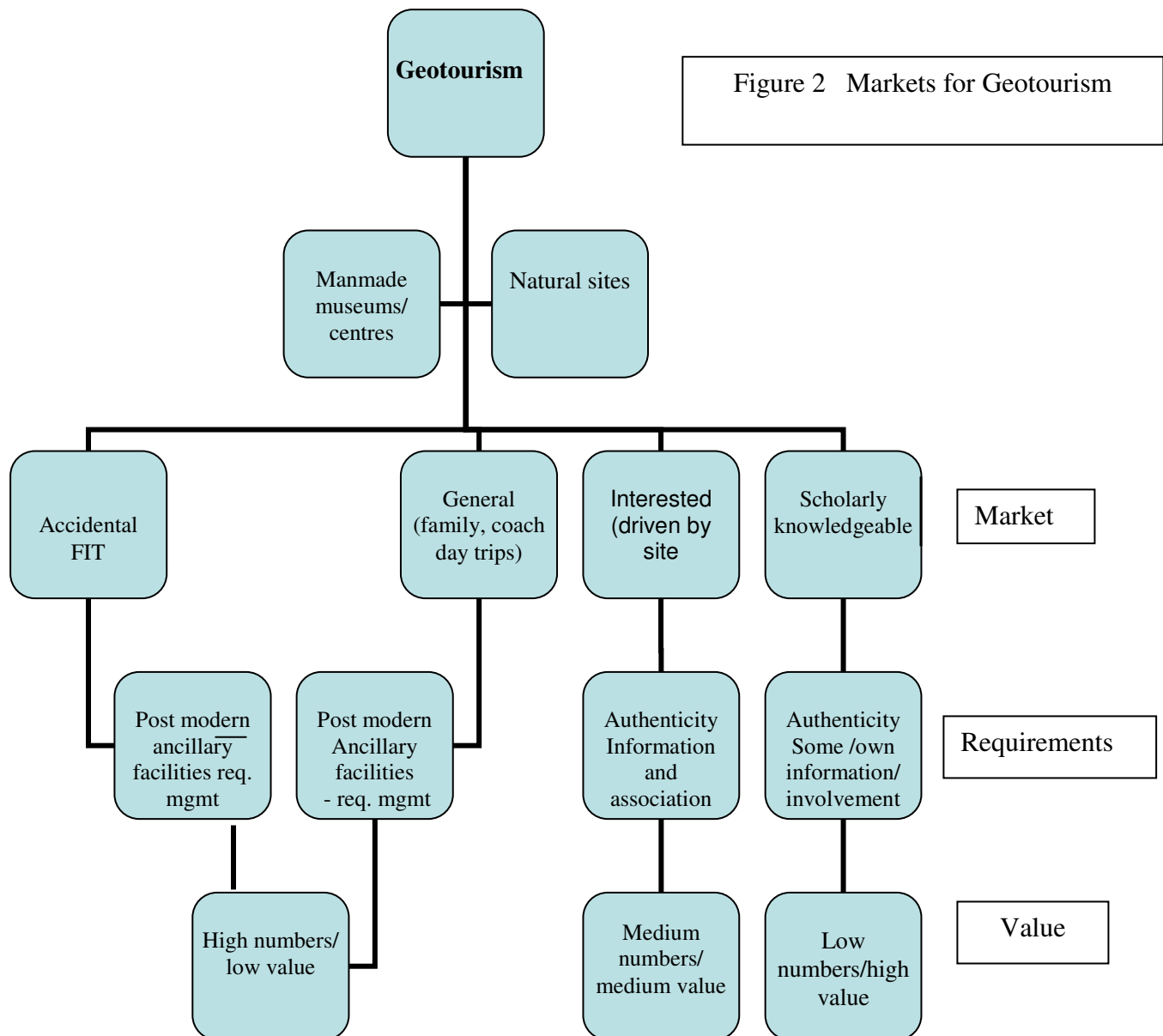
Seaton (2002) identified eight different typologies of cultural tourist one of which specifically embodies geotourism: the natural and social scientist. A number of other typologies such as dilette/aesthete who visit cultural sites, the antiquarian heritage seeker: who is interested in the classical past and archaeology; (e.g. Pompeii) the explorer/adventurer who is involved mountaineering, backpacking engage with products that are to a lesser or greater degree grounded in geology. Rojek (1993) identified heritage tourism as one of the four different types of tourist attraction that constituted the post modern offering the others being thanatourism (dark tourism), literary landscapes and theme parks. Ten years later, Smith (2003) developed a typology of the cultural tourist comparing it the requirements of the post tourist and it is interesting to note the divergence in requirement between these two markets. . These two typologies from two opposite ends of the spectrum are based on product requirements and indeed seek different products with which to engage.

Table 1 Typologies of the cultural tourist (Smith 2003)

The post tourist	The cultural tourist
Enjoys simulated experiences , often in the home	Keen on personal displacement and the notion of travelling

Little differentiation between tourism leisure and lifestyle	Actively seeking difference
Acceptance that there is no true authentic experience	Seeking objective authenticity in cultural experiences
Treats the commodification of the tourist experience playfully	Concerned with existential authenticity and enhancement of self
Ironic detachment from experience and situations	Earnest interaction with destinations and inhabitants
Little interest in differentiating between reality and fantasy	May have idealised expectations of places and people
Interested in hyperreal experiences	Interested in real experiences
Acceptance of representations and simulacra	Disdain from representations and simulacra

Smith focuses on the difference between the post tourist and the cultural tourism highlighting the gaps. Therefore it is important to evaluate the position of heritage and culture in a post modern society. There is a need to do this in order to consider the expectation and impacts of different market types on the sites and in doing so identify the policies and structures that are required to ensure development and marketing leading to conservation and sustainability Baudrillard (1990) defined postmodernism 'as a world of simulations and hyperreality'. Strinati (1994) defined postmodernist characters as: the breakdown of the distinction between culture and society; an emphasis on style at the expense of substance and content; the breakdown of the distinction between high culture and popular culture; confusion over time and space; the decline of the meta narrative. Over the past decade, especially with the continued influence and reliance on information technology, one could argue that many of these characteristics have been reinforced leading to the creation of tourist experiences that little resemble their original link to a place or space. Is this what the visitor wants? What are his/her requirements and how can Geotourism fulfil these expectations? The driving nature of information technology has led to coinage of the advent of wiktourists and wikinomics so reliant are the markets on the world wide web to disseminate knowledge and information. Considering the previous typologies and classification and taking into account market requirements (post modern and cultural) and the value of the visitor to the site, an approach is illustrated by the following diagram:



As accidental and general visitors require the same facilities which are post modern in nature, they can be considered similar in terms of value. However as the decision making process is different there is a need to choose suitable marketing distribution channels for each separate market.

Considering the above markets more closely, further evaluation of market and site requirements should be undertaken. Geotourism can either be primarily focused on the geological product or it can be focused on the markets that potentially may find this type of product attractive. In order to ascertain the attractiveness of the product to the different markets, certain evaluative criteria need to be considered. These include such criteria as motivation to visit, expected duration (indicating involvement/engagement), requirements of the site for the specific market, unique selling points, the use of suitable marketing message, marketing communication tools and distribution channels. However the value of the visit to the site needs to contribute towards finding a balance between satisfying the visit and satisfying the site (sustainability)

Other factors generally constitute a satisfactory site including:

- Geological importance - significance of the site, uniqueness, recognition
- Capacity to service visitors including access , interpretation, existing signage, marketing material, operational flow and management etc
- Marketing potential and attractiveness (linked to the profile continuum)

- Range of complementary services and facilities

The following tables outline the different markets that might visit such a site using the evaluative criteria

Table 2 Market typologies using market evaluative criteria

Market	Market 1 <i>Accidental (FIT not drawn specifically because of the site, visit because they are in the area)</i>	Market 2 <i>General (family, day trippers, coach tour school/education market, FIT) Prior decision-making evident)</i>
Method of transport/travel used	Mainly car – self drive FIT	Varied : though mainly car and bus
Expected duration of stay	1-2 hours depending on their interest	1-2 hours depending on the extent of site and variety of things to do
Requirements of visit : physical	Parking, T and P, other things to do e.g. children’s play areas, art galleries, shops, good access-easy to get around and well signposted, leaflets and simple clear interpretation which tells a story that can be remembered	Similar once the visitor is there
Requirements of visit: psychological	Integrated with other products, telling a story Well managed and kept, a sense of achieving something form the visit, perhaps mementoes to take away (map/souvenirs etc)	Similar to 1 Motivations will vary with visitor type and hence there may be a dominant motivation for visit e.g. family group and day trip (things/events to entertain children)
Element of attractiveness (USP to specific market)	Proximity to areas of tourist accommodation, main roads etc.	Geographical proximity to place of population, educational value and interest(curriculum inclusion), things to do, entertaining Capacity to cater for coach tour
Suitable Marketing communication/tools	Signposting and signage The use of visualization (Marriott and Aitchinson 2007)	Website, brochures, advertising and word of mouth, tourist offices
Marketing message	Attractive and recognisable signs indicating the nature of the site	A place to be entertained and educated ; a place of interest for everyone
Value of visitor (consideration of impact - economic, physical, social, visual,)	Low	Low- medium

Market	Market 3 <i>Interested (driven by site)</i>	Market 4 <i>Scholarly</i>
Method of transport/travel used	Car though maybe bus in the case of specialist tours	Car and Bus though access through public transport if available
Expected duration of stay	2 hours plus	May stay in the area – at least a day , may also explore similar local sites (discovery) though there will be a main focus of a specific site
Requirements of visit : physical	A guide with knowledge of the site; this could be replicated by depth knowledge brochure/pamphlet	As close to the original as possible. T and P and parking etc will be discrete. Will not want other facilities a

	Interpretation – authenticity is important	such as shops etc as these will detract from the site A guide with knowledge though again this and discrete interpretation could exist.
Requirements of visit: psychological	Sense of place and ambience associated with the site	Authenticity, ambience, experiential etc. the need to involve strong
Element of attractiveness (USP to specific market)	Authentic nature of the place: a real story that can be told	A sense of place and experience. The visitor needs time and space to engage with the building and site and this could be achieved subtly.
Suitable Marketing communication/tools	Website, books, specialist agents, word of mouth, heritage societies etc	This visitor has considerable knowledge achieved through research. Books and word of mouth Website for opening times/ access etc
Marketing message	A special place of geological/nature interest	Should link to the site itself and what it portrays. Use of geological terms
Value of visitor (consideration of impact - economic, physical, social, visual,	medium	medium -high

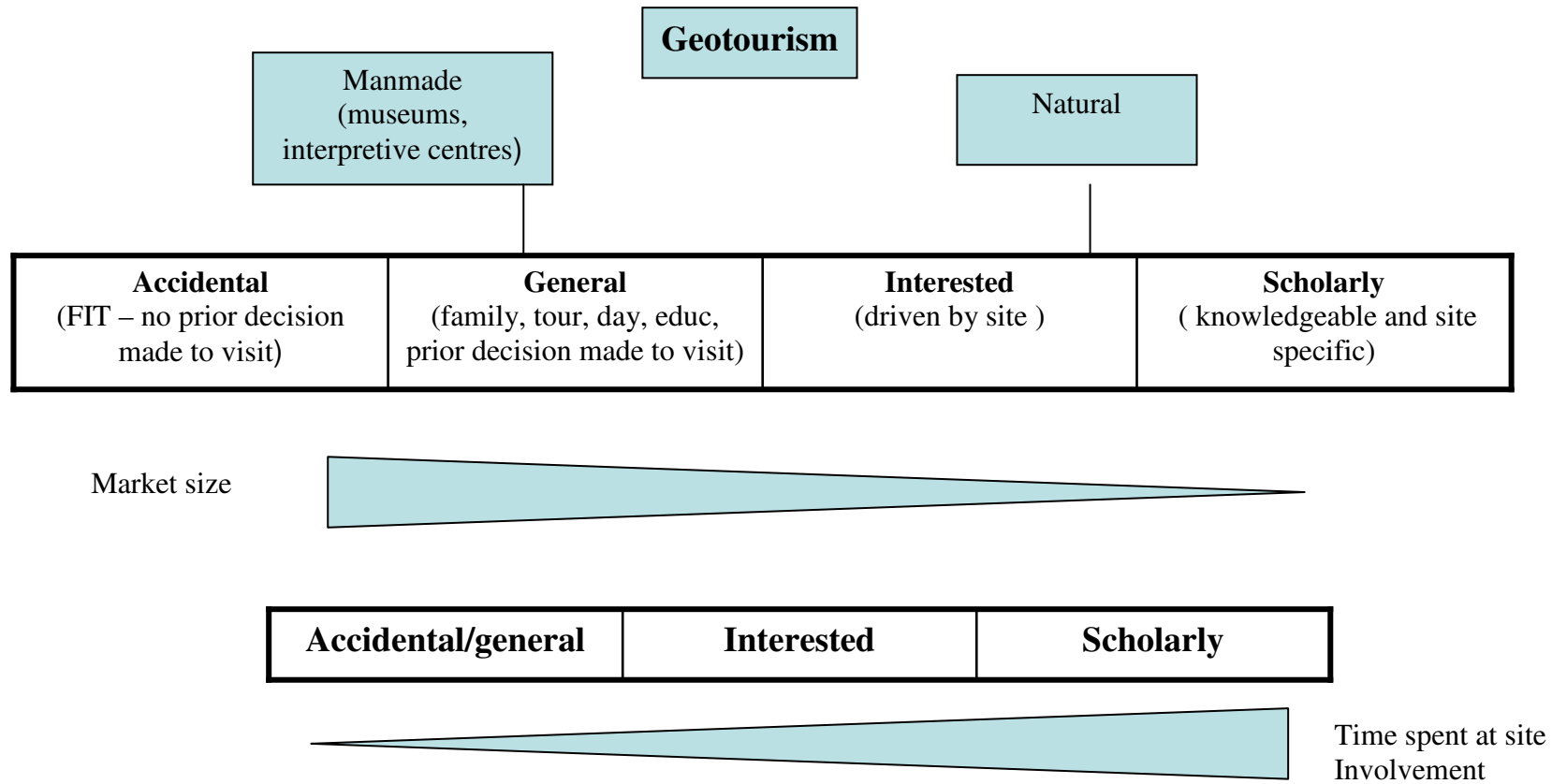
The general market segment need to be entertained. The scholarly market wish to engage and therefore consider the place as special with a need to interact in both a tangible and intangible manner. As the visitor type moves from general to scholarly through knowledge, increasingly the site become more central in the decision-making process and drives the visit. The visitor becomes more involved with the site as they wish to spend further time at the site. Value to the site per visitor increases as visitor is more likely to stay within a local area and contribute to its economy.

Based on the above markets and their needs, a continuum can be developed. As market size decreases, interest, involvement and overall value to both the site and the visitor increases. The accidental /general market where the specific site is not central to their visit will seek and require ancillary facilities and activities in order to prolong duration of stay and engagement with site whereas the scholarly brings their knowledge to the site and any other ancillary facilities may detract for the overall experience.

There are some exceptions – those sites are core site. These sites are well known (Giants Causeway, the Burren) and attractive to all markets. They have a tradition and have been developed over a period of time with interpretation and other facilities and are of both interest to the general and to the scholarly visitor. However, in terms of the general visitor it is not the geology that will motivate their choice to visit but the combination of the site and other activities e.g. walks, interpretations, shop, café etc and this integrated experience delivers greater satisfaction to this market. On the other hand the scholarly market is driven solely by the geology. Information comes from self (education, books) and there is little need for interpretation. Additional facilities do not feature as a motivation to visit. Therefore additional facilities, extended and associated activities are required to engage the general/accidental visitor in order that they derive further satisfaction.

There is a need to identify where product development is required in order to attract and engage the general visitor. This will be suitable for certain sites. Other sites will be more suitable to the scholarly market and require little development. It is essential that each are marketed according to the specific market requirements.

Figure 3. Market Profile



The three categories have been developed based on the evaluative criteria such as duration of stay, level of involvement and experience requirements as cited in the previous tables.

6.0 Implication and conclusion

Experiential involvement with the use of as many of the five senses as possible increase both the educational and interest value of a resource particularly with those who have a marginal relationship. By using a more focused marketing approach and the creation of greater involvement with the site may lead to greater value for both the visitor and the site and contribute overall to sustainability. There is a need for visitors to become involved with the resource, in reality to have an affective relationship with geotourism in order that they might choose to experience a site or aspect of interest. In order to ascertain what creates greater involvement within each of the markets there is a need to have a **market rather than product orientated approach to encourage sustainability.**

Sustainability puts the products and local community at the core of the experience. However in order to achieve true sustainability (economic, environmental, social) and engage the visitor by extending duration of stay (and spend) the **value of the site to visitor** exploring market requirements; motivation to visit, what are their interests, what do they hope to gain by visiting the place, levels of involvement and engagement need consideration.

It is agreed that all sites be they manmade or natural should they attract visitors need to be managed to a greater or lesser degree. Visitors to any site always create an impact. The **value of the visitor to the site** needs to be considered of site requirements in order to remain in equilibrium with constructs that denote sustainability.

In a country where only 6% of the visitors are involved with outdoor activities (Failte Ireland 2007) and the resource and climate are viewed kindly to the majority of markets (less so to the domestic market) there is scope to develop other experiences involving geotourism. **Methods of delivery should be linked to the experience e.g. clusters, themes and stories** in order to appeal to a wider range of market segments. It could be linked to hill walking and hiking, or the proposed coastal walking routes an activity recognized by Failte Ireland as an area of potential further development (FI 2007p60/61). There is potential to develop themes linking sites through trails (FI 2007 action 6.3.6) or integrating geology as part of the overall story such as what is delivered through Breifne. It is a necessity that whatever is developed or made attractive to the general visitor is linked to an experience - experiential as defined by FI (2007).

Hose (2005) who has written extensively on the use of geological sites in particular focusing on the Dorset and east Devon coast in England in particular the Jurassic coast close to Lyme Regis found that interpretive material had an average reading age of 14-18 years old and hence was unsuitable for both the casual visitor and for children. This basically makes the site inaccessible in terms of experience for both the casual visitor and children which would constitute much of the visitors to sites. There is a need to **identify ways to engage according to market typology.** Activities such as gold panning (undertaken at Glengowla mines) fossil hunts, extinct volcano watch may all have a place to play in the context of added value to an area for the accidental and general markets. Museums, interpretation provision and related field activity have a role to play in this market whereas access, exposure and formations are important to the scholarly market.

In terms of marketing communication, suitable tools and methods of distribution should be based on the different market requirements and needs. A proactive and focused approach (not only web based requiring stimulus to search by a potential visitor) is required. As each market accesses different information systems. **Consideration needs to be given to information systems based on market use and the validation of their use to ensure penetration of the identified markets**

Finally this is a conceptual paper based on information and experiences interacting with all spectrums of the proposed marketing typology. The Greenbox, the Breifne project and the European Geoparks have gone some way to opening an Aladdins Cave of geological riches. However, unless the markets can be tapped in the manner appropriate to their requirements, the future of niche area such as geotourism will not be sustainable. This paper highlights a myriad of aspects that need **future research and testing** in order to get the right mix.

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