

Bachelor Thesis

Marketing Trenchless Technologies in Developing Countries: Methods, Barriers, Issues

**INTERNATIONAL BACHELOR ECONOMICS AND BUSINESS ECONOMICS
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Abstract

This paper aims to identify marketing conditions and strategies for the successful application of trenchless technologies in developing countries. It summarizes existing research on the business-to-business environment and market specifics in emerging economies and reviews the ways that trenchless companies approach marketing by looking at publicized information, promotional materials and conducting an in-depth interview with the marketing manager of a prominent European trenchless company. Furthermore, issues that firms face in developing countries specifically are identified and discussed to identify a direction for improvement and further research into the topic.

1. Introduction

Trenchless technologies are a quickly expanding field of providing services for modern infrastructure. Despite its continuous expansion the field remains extremely narrow and is home to few competing firms. Because of the intricate specifics of each project and the close relationship between service providers and clients in the business, unconventional marketing strategies are used to meet the needs of the market. This creates a profound marketing situation that would be very intriguing to explore, as uncommon marketing strategies in niche markets are rarely the focus of many academic works.

Moreover, these firms often operate in developing countries, adding to the scientific interest and tying into prominent modern day social issues. Developing countries continue to be at the forefront of international discussion due to the continued lack of basic amenities for an enormous number of people. Water scarcity continues to be a problem in developing countries, not only because of physical shortages of water, but mainly due to the failure of institutions to supply water or due to a lack of adequate infrastructure. ("Scarcity", 2018). In 2010, the United Nations General Assembly recognized the human right to water and sanitation. Every human being should have access to water for personal and domestic use, and it must be safe, acceptable and affordable; and physically accessible. However, 2.3 billion people worldwide lack access to basic sanitation facilities and a great number drink water that is delivered through a system without adequate protection against sanitary hazards. ("Water", 2018). Furthermore, unclean water and poor sanitation are a leading cause of child mortality in developing countries. The importance of water infrastructure is immense, however both maintenance and expansion of these services are severely constrained by a lack of financial resources and the low prioritization of water and sanitation. In addition, lack of accountability, corruption, and inefficient management continue to limit the ability to improve health outcomes. There exists also a lack of personnel and political will to ensure that quality and health guidelines are enforced (Montgomery & Elimelech, 2007).

Due to these unique circumstances it is especially difficult to penetrate these developing markets, even if the firm is offering essential infrastructure services that would improve residents' quality of life significantly. This creates the need for a unique marketing approach from the service provider in order to secure a contract. These challenges and firms' corresponding strategies are of significant relevance to the field of marketing as they represent a rather unique situation that is presently scarcely explored. These strategies may also be applicable to penetrating developing markets outside of the field of trenchless technologies. From a marketing perspective, trenchless technologies present a need for unique marketing approaches due to the emergence of unique challenges. First of all, as trenchless technologies are still not very wide-spread firms must find a way to better communicate their benefits compared to traditional methods. Furthermore, the extremely narrow scope of the field and the need to adapt to the particular circumstances of each and every job facilitate very specialized relationships between clients and service providers and differentiate trenchless technologies from traditional marketing strategies significantly. These characteristics of the field are of great scientific interest as they present unique challenges for marketing and provide solutions and strategies that do not conform to traditional marketing approaches and are scarcely explored in academic literature.

The research aims to define an unconventional marketing situation combining three unique points of consideration for marketing strategies that separate it from traditional approaches: (i) the highly technological nature of the service; (ii) the notably small size of the industry, coupled with the fact that these services are used exclusively by businesses and local/governmental organizations; and (iii) the unique aspects and marketing challenges of having developing countries and countries with weak infrastructure as a target market for the service.

The corresponding research problem is defined as follows:

How do trenchless technology companies successfully market their services in developing countries?

The research problem will be answered with the help of the following research questions:

- 1. What differences exist between marketing trenchless technologies in developing vs developed countries?*
- 2. What methods are trenchless technology companies using to market in developing countries?*
- 3. What barriers are there for marketing/operating in developing countries?*
- 4. What outstanding issues are there in the field?*

Existing literature on the aforementioned topics will be reviewed to define the characteristics and unique challenges of the market situation and examine the points where traditional strategies are unsuitable for field-specific marketing problems. Additionally, the research will focus on how existing firms in the field approach and solve these issues by analyzing the marketing strategies they employ in the market. Finally, possible additional problems or challenges of these marketing strategies will be identified, and the research will present recommendations for improvements to these strategies.

2. Theoretical Framework

The purpose of the research is to examine, describe and categorize the practices and types of marketing that these service providers apply in the aforementioned sphere. In this section, several essential key terms will be defined as part of the theoretical groundwork of this research.

Business-to-Business (B2B) is a type of marketing that involves marketing a company's products or services to another company or institutional buyer. While it is often overshadowed by its counterpart,

consumer marketing, business marketing has an enormous importance to the economy. A lot of developments in the field of marketing have different implications in a B2B context, and the “one-size-fits-all” general approaches usually undertaken by consumer marketers are overlooking situation-specific conditions. Customer behaviors, types and cultures differ significantly in a B2B context, and the challenges faced by B2B companies are quite distinct from those that affect B2C firms (Wiersema, 2013). Webster (1978) argues that B2B marketing is differentiated from B2C by the characteristics of (1) product complexity; and (2) buying process complexity. He also notes that buyers and sellers are interdependent in B2B markets, and Hakansson and Snehota (1995) argue that business marketing is driven by relationships with unique structural and process characteristics. Consumer firms are more likely to practice transaction marketing and database marketing, while B2B firms are more likely to practice interaction marketing and network marketing (Coviello, N.E., and Brodie, R.J., 2001). As B2B and B2C firms employ different types of marketing, their strategies must differ significantly.

B2B firms are more likely to practice interaction and network marketing and contact their primary customers directly; marketing takes place at a higher level (usually senior management) and is more relational with an emphasis on creating long-standing business relationships rather than singular trades or transactions (Coviello and Brodie, 2001).

Additionally, traditional marketing terms such as the 4P’s cannot be applied successfully to business-to-business approaches because of their internal orientation and lack of focus on the customer. Because the 4P’s don’t incorporate interactivity with the customer or the changes in customer paradigms and preferences, they are not an optimal planning tool for the modern business environment and relying on them may erode customer trust and lower customer loyalty (Constantinides, 2006). At the core of successful industrial relationships are customer value, interdependence and understanding, which the commonly used Marketing Mix does not integrate (Parasuraman, 1998; Andersen and Narus, 1999).

The key to providing a valuable service is insight on the business partner's operations (Andersen and Narus, 1998). This is a crucial point of developing product offerings that provide optimal value for the customer and makes for more persuasive and detailed business proposals, while also ensuring that both parties are receiving mutual benefit in the relationship.

The success of business-to-business firms is based on the ability to adapt to the needs of their customers. Although both types of firms adapt to their partnerships, selling firms tend to adapt more frequently than buyers. This is supported by data, as buyer power has a strong influence on supplier adaptations, but supplier power has no influence over customer adaptation (Brennan, Turnbull and Wilson, 2003).

Additionally, this type of marketing is associated with actual changes in behavior across different firms and customers and these behavioral adjustments to the partner increase company payoff (Avlonitis and Gounaris, 1997).

Developing countries require unique product solutions and present unique challenges to companies in socio-cultural, institutional, and business aspects. Socially, customers in developing countries have a marginal propensity to save and have less interest in highly-technological solutions, and products hold as much value as the needs they help people meet (Yujuico and Gelb, 2010).

Institutionally, emerging economies are experiencing rapid changes in society, undereducation, stark contrasts in household sizes between low and high-income quartiles, as well as a focus on hierarchy and collectivism and problems in the regulative subsystem (Steenkamp, 2006). Common institutional factors that negatively affect the business environment are corruption, bureaucracy, tax evasion and market demand instability. Building sales networks is difficult due to a lack of trained force to recruit.

Aside from the customer's needs, firms face the increased difficulty of adapting their products and solutions to regional and institutional factors. Although the need to customize is even greater, customers

may not possess the technical competencies to cooperate in creating the most suitable solution (Cassia and Magno, 2015).

Trust is one of the most important factors of a business relationship, even more so when said relationship is international. However, building trust in developing markets is impeded by the lack of access to information and increased difficulty of communication, as well as cultural differences such as business hierarchies (Heffernan, 2004).

The service sector also experiences these difficulties. The evaluation of services becomes more difficult because of their inherent intangibility, heterogeneity and inseparability. The reliability of services is better established by emphasizing on societal aspects (such as tradition) over technological aspects (awards or innovation). Service quality expectations are systematically lower in developing countries, and this tolerance towards inefficiency can make it more difficult to justify the price of a high-quality service. Competitive edge is mostly maintained via low prices in these regions, and services are more likely to be judged on the performance of their core functionality over added aspects or extended benefits. Word of mouth and endorsements from satisfied customers about the service are the most important and effective promotional methods (Malhotra, Ulgado, Agarwal and Baalbaki, 1994).

Trenchless technologies are defined as a family of methods, materials, and equipment that can be used for the installation of new, or the rehabilitation of existing, underground conduits with minimum or no excavation requirements (Ariaratnam, 2011). Operations are carried out underground through entry pits and monitored with CCTV and other means of inspection.

They present an alternative to conventional trenching in working conditions where this method is unattractive and costly. Another advantage of trenchless technology is that it is significantly less disruptive to existing infrastructure and cuts the costs of surface restoration substantially. Aside from

the associated high agency costs, open cut trenching operations often result in high user, or “social” costs (McKim 1997, Boyce et al. 1994, and Thompson et al. 1994). With trenchless methods, the public is shielded from most of the construction activities and operations’ impact on daily life is minimal.

3. Methodology

The research process will consist of a literature review and an analysis of current marketing approaches of trenchless technology firms.

The resources for the literature review are collected from various online sources. The searching methods involved searching the Erasmus University library catalogue for relevant material, as well as the databases of the following journals: Harvard Business Review, The American Economic Review, European Journal of Marketing, International Marketing Review and Industrial Marketing Management. The following search terms were used: business marketing, business-to-business marketing, marketing new technology, marketing in developing countries, and synonymous terms thereof. Inclusion criteria for the articles focuses on their relevance and journal of publication. Both qualitative and quantitative studies are included, with a specific focus on the (market) circumstances of developing countries but including worldwide sources for marketing theory.

All resources are published publicly to their respective journals, as well as in the cases of newspaper & online articles and books.

Marketing resources on trenchless technologies firms are obtained from their websites and the websites of affiliated organizations, as well as offline promotional material such as brochures. All resources are publicly available. The analysis will consist of defining and describing firms’ marketing strategies and attempting to identify the contextual characteristics and unique points compared to conventional

marketing strategies, as well as analyze them using frameworks and existing theoretical work on marketing in developing countries.

4. Literature Review

As with any research, it is important to establish a base of existing knowledge that has already been discussed in existing literature. As this paper reviews a very specific situation, a literature review will be used to theoretically reinforce the unique conditions represented in the marketing problem. Literature on three main topics will be reviewed, on the specifics of business-to-business marketing (1), developing countries and their economic and marketing situations (2), and on the challenges and specifics of marketing new technologies in the form of market development/penetration (3).

4.1. Business-to-Business Marketing

As briefly touched upon in the theoretical framework, business-to-business, or often b2b, marketing is essentially the group of marketing activities involved in transactions between two organizational entities. The field is well-documented and many theoretical and practical works on the topic are available. In order to begin addressing the situation of marketing trenchless technologies in developing countries, it is necessary to determine the specifics of marketing trenchless technologies in general by examining the contrasts between business-to-business and direct-to-consumer marketing.

Hadjikani and LaPlaca (2013) describe the main course of development of B2B marketing as a shift from an economic theory dominated to a behavioral theory dominated field. Early business-to-business marketing was very much rationalized and based on economic theory. While consumer choices were viewed as subjective and irrational, businesses conducted their buying with only economic factors in mind

– cheap prices, acceptable quality and acceptable delivery. Despite observing clear preferences in trading partnerships, researchers attributed them only to cost and profit margins, rather than conceptualizing preferences or other aspects of a business transaction. Hadjickani and LaPlaca also describe John Wanamaker’s approach to business marketing as a system in which close contact and establishing social relationships buyers and suppliers help achieve more efficient distribution. Over time business-to-business marketing has become less about pure economic profit and more about reciprocity, mutuality and cultivation of trust, which bring repeat purchases and repeat profits, and this is highlighted in other recent B2B research.

Indeed, Coviello and Brodie (2001) provide some empirical evidence for this via a questionnaire in “Contemporary marketing practices of consumer and business-to-business firms: How different are they?”. They find that B2B firms are more likely to practice significantly higher levels of interaction marketing: there is an emphasis on interpersonal contact with primary customers, and a much higher level of individual communication between employees and customers. They are also more likely to invest developing long-term personal dyadic relationships. Similarly, these firms are also more likely to be involved in network marketing, emphasizing contract with primary customers and participating in relationship networks. Another important distinction of the B2B field made in this questionnaire is the frequency of interaction between senior managers of organizations involved. Business-to-business marketing generally takes place at the senior management level and was found to be more relational, unlike consumer marketing which tends to be general and more transactional. These findings carry strong implications for marketing strategies related to business marketing and place a key emphasis on creating business relationships rather than facilitating isolated transactions.

The Marketing Mix Revisited: Towards 21st Century Marketing (Constantinides, 2006) offers a contemporary view of the mainstay 4P’s marketing framework in different marketing contexts, including

business-to-business and service marketing. Despite the widespread usage of the marketing mix framework, several shortcomings of the model have been identified in aspects deemed important by contemporary marketing literature. Most common criticisms against the 4P's are its internal orientation and focus on the company rather than customers; its lack of consumer interactivity and ignorance regarding the changes in consumer paradigms which may lead to lower customer loyalty and decreased customer trust; and its lack of strategic elements which deem it unfit to be a key planning instrument in the volatile business environment of today. There is ample evidence that creating long-term relationships with customers is already a main marketing focus of companies with its importance still on the rise. Many authors that endorse relationship marketing are convinced that the 4P's do not hold up in a relationship marketing situation exactly due to the aforementioned shortcomings. In the specific context of industrial marketing, the 4P Marketing Mix is seldom found appropriate as a management tool due to the field's emphasis on long-term relationships, empathy, mutual benefit, co-operation, mutual understanding of customers' needs and service as the most important success factors. In this context, the impersonal, cookie-cutter approach of the Mix is incompatible with the key value generators of Industrial marketing (Turnbull, Ford and Cunningham, 1996). The long-term character of the buyer-seller relationships illustrates the need for more robust strategic components which the Marketing Mix cannot provide. Successful industrial relationships are built on creating value for the customer, interdependence and understanding (Parasuraman 1998; Andersen and Narus, 1999), which the Marketing Mix in its current does not facilitate or support. The same applies for the service segment, which focuses on the human element and is of a personal nature. Personnel in service delivering acts as both a tool of persuasion and a parameter which affects service quality for the customer. Interaction and quality are an important aspect of services marketing yet are missing from the Marketing Mix. Personalized communication and relationship building are also fundamental elements that are not adequately addressed by the 4Ps (Doyle 1994), English (2000).

Other literature focuses on specific business marketing insights that fit the relationship-based model. Anderson & Narus (1998) apply the emphasis on interpersonal relationships in business marketing and link it to creating value for customers. Their article “Business Marketing: Understanding what Customers Value” focuses on building successful relationships with business customers. They point out that the key to creating business relationships is the ability to deliver and convey the potential value offering to customers. They argue the importance of insight on business partners’ operations is key to providing a valuable product or service. Knowing what value the firm provides for the customer is a crucial point of developing a new or improved offering, especially when it is priced higher than existing products. A specific value proposition makes for a more persuasive business proposal and ensures that both parties mutually benefit from the business relationship, a key success factor for business-to-business operations.

Brennan, Turnbull and Wilson (2003) delve deeper into interfirm relationships. They stress that the success of business-to-business competitors strongly depends on their ability to adapt to the needs of single customer organizations. While supplier companies tend to adapt more frequently than buyers, both selling and buying firms adopt specific adjustments for single partners. The authors highlight that adaptation can take place at the product or management level and may involve specific informational exchange or even restructuring in the organization. They explore the main motivators of dyadic adaptation in business-to-business operations. The main drivers of supplier adaptation are relative power, buyer support and preferences of the firm regarding the strength of relationships in exchanges. Their data suggests that buyer power has a strong influence on supplier adaptations, but supplier power has no influence on customer adaptations. Furthermore, although buyer and supplier adaptations are positively associated, adaptation by suppliers is far more common and much greater than that of buyers. Supplier firms adapt more for customers with large bargaining power, and also more for relationships that include mutual adaptation. “Dyadic Adaptation in Business-to-Business Markets” provides evidence that

“relationship marketing” in business-to-business markets is associated with making actual changes in approach from one customer to another, and really doing more for the customer and their specific needs.

Adaptation is defined as another key success factor in business-to-business relationships but also brings about increased complexity of conducting operations due to the necessity to customize and coordinate. This increased complexity, on the other hand, brings about increased returns for the company as illustrated by Avlonitis and Gounaris (1997) in their “Marketing Orientation and Company Performance” research. They show that in the presence of actual behavioral adjustments in the direction of adaptation to a business partner, there is a significant payoff yield. However, they also stress that attitudinal and behavioral aspects of marketing orientation are not mutually exclusive, but instead interdependent. Without the underlying attitude of being relationship oriented, a company will not adopt any of the behaviors associated therewith. Their analysis shows that skills to collect intelligence about the market have to be incorporated into the company. Furthermore, the company must also accommodate arrangements that allow them to communicate efficiently in order to show responsiveness to their customers’ specific needs and satisfy them. This adoption is statistically positively associated with company performance both compared to performance objectives and the performance of competitors.

In *“The B2B Agenda: The current state of B2B marketing and a look ahead”*, Wiersema defines the transition from a product to a marketing approach and the adoption of relationship-driven business principles as a potent development that is reshaping B2B marketing. Another one of these developments is the importance of global markets. Emerging markets require unique product solutions and localized support, which in turn demands substantial resources. Most of the economic activity in these countries is centered around B2B and infrastructure expansion in particular, and this creates a goliath opportunity for firms to establish operations. However, in order to capitalize on this opportunity, firms need to be prepared for the unique circumstances of these markets, which will be examined in the next subsection.

4.2 Business and Marketing in Developing Countries

In prior decades, marketing efforts were focused mostly on regions that offered the highest profitability. However, with recent trends of market saturation and intense competition in many industries, managers are recognizing the opportunities that lie in marketing to “the bottom of the pyramid” (Prahalad, 2005).

Yujuico and Gelb (2010) present a scenario that requires businesses to change their approach when operating in developing countries and describe successful approaches to marketing in less-developed countries’ business environments. They argue that a change from short-term thinking and “business as usual” approach is required to create sustainable demand in emerging markets. Aside from “the bottom of the pyramid”, which consists of people that do not have sufficient funds even for basic necessities, there exists a demographic of consumers in these countries that do have a certain amount of disposable income. The problem is, however, that their propensity to save rather than spend is quite strong, and they are hardly moved by the mere sentiments of owning something that is new or highly technological. Possession is not an end in itself, but goods are only worth as much as they help people meet their needs. Understanding the fears these people have about spending can be invaluable, because they provide insight into their priorities and in doing so reveal issues that businesses should be focusing on to provide not only products, but security and ultimately increase their willingness to consume other goods and services.

However, numerous issues arise for firms that are attempting to enter such markets. Burgess and Steenkamp (2006) underline how the institutional context separates emerging and developed economies. They specify differences in the socioeconomic subsystem, rapid changes in society, undereducated youth, and much differences in household size and income between those at the top and bottom of the pyramid; as well as the cultural subsystem, with a focus on hierarchy and collective groups; and the regulative subsystem, i.e. that legal outcomes are less likely. These institutional conditions can have a game-changing

impact on business-to-business strategies as well, as B2B markets have several distinctive features that strongly affect the suitability and success of different marketing strategies: the importance of long-term business relationships, the presence of a high market concentration, the complexity and need to customize individual solutions, the complexity and competences of the decision-making unit; and the relevance of personal sales over general advertising. (Mudambi, 2002; Håkansson and Snehota, 2006).

Cassia and Magno (2015) describe in great detail in the context of Eastern European emerging economies the most significant marketing issues that have to be faced in developing vs. developed countries. Moreover, they also take into account the perspectives of small and medium-sized companies which can still capture opportunities in those markets but are often neglected by researchers in favor of large corporations. This study presents several recurring marketing issues according to their analysis. Common institutional factors that cause uncertainty and instability are corruption, bureaucratic procedure length, tax evasion and general instability of market demand. Building a sales network is often impeded by the difficulty of finding suitable partnership and recruiting and training local sales force. Foreign companies are faced with slow development, recruitment and training of a local sales network, even if opportunities are attractive. Product and solution adaptation are distinctive features of business-to-business marketing, but emerging markets present a greater difficulty of adaptation due to unique regional and institutional factors, aside from the particular customer's needs. Standard equipment may be unusable or may produce different output or perform differently, due to environmental conditions, differences in quality of the raw material input, and competences and culture of the local personnel. Good output requires complete control over the entire production process, which can be difficult and costly to establish. Customized solutions become necessary but also even more difficult to obtain because the customer often times does not possess the technical competencies required for the co-production process. Communication, branding and trade fairs also present challenges to business-to-business firms, and often times trade fairs can help establish local credibility for the brand, but in less-developed countries, trade

fairs may not be consistent with the quality of the firm's products or fail to attract the audience targeted by the participant. Personal contact is likely the most critical communication factor in these markets and customers require a certain degree of trust to close a business deal.

Trust is one of the most important aspects of creating business-to-business relationships, evidently even more so in less-developed countries and emerging markets. Firms face a multitude of challenges when looking to establish a business relationship, even more so when that relationship is international. Cross-cultural business-to-business relationships must overcome both institutional and cultural barriers to establish trust. Heffernan (2004) seeks to examine the factors that build trust at the beginning of a business relationship, that is the pre-relationship, early interaction and relationship growth stages. Three common components of trust are thought to be credibility, integrity, and benevolence (Sako, 1992; Mayer et al., 1995; Sirdeshmukh et al., 2002). The pre-relationship stage mainly involves identifying the need for a partnership and exploring different candidates before finally selecting a potential partner. At this stage, the majority of trust stems from evidence from indirect sources about the potential partner. In a cross-cultural business-to-business relationship, this is the only type of trust developed in the pre-relationship stage. At this stage, the reputation of the organization and people within the organization that are facilitating the partnership is of the utmost importance. Most commonly used sources are internet searches, informal communication with third parties that have experience with the potential partner, and any available formal reports on the partner.

At the early interaction stage, contractual trust and competency trust are also formed. Contractual trust is related to how well the partner delivers on verbal agreements made, such as replying to e-mails, interacting on the phone, or granting requests that had been made. Competency trust is essentially the conviction that the partner has the necessary competence to complete their job in the partnership. At this

stage it is important to make a good first impression in the relationship, and show commitment and genuine interest in the partnership, as well as demonstrate sufficient ability to the partner.

At the relationship growth stage, trust emerges from goodwill and competency issues. Goodwill includes doing more for the partner that is explicitly agreed upon in the contract and dealing with unforeseen situations in a benevolent manner to aid the partner. Alternatively, conforming to the contract rigidly may reduce goodwill trust. Building competency trust at this stage of a partnership is mostly attributed to the actual performance of the partner within the expectations of the other. At this stage, frequent and effective communication and knowing the partner's expectations are very important factors to deal with these issues and develop trust; as well as the appropriate allocation of resources and effort into the relationship operations.

The unique circumstances of developing countries also affect the service businesses significantly. Due to the inherent intangibility, heterogeneity and inseparability of services, their quality becomes difficult to evaluate decisively (Berry and Parasuraman, 1991). Malhotra, Ulgado, Agarwal and Baalbaki (1994) use Parasuraman's ten dimensions of service quality framework (reliability, access, understanding of the customer, responsiveness, competence, courtesy, communication, credibility, security, and tangible considerations) to compare these determinants for developed and developing countries.

Reliability, consistently performing the service dependably and accurately, can be portrayed in two directions: a high-tech and high-touch approach. The high-tech approach involves emphasizing the technological superiority of the service and takes advantage of the customers' education and understanding of the subject matter to have them comprehend the benefits of the technology. Compared to developed countries, people in developing countries are less educated and financially well-off and may not have the resources to adopt newer technologies. The authors hypothesize that the reliability of services can be better established with an emphasis on the human aspect in developing countries, as

opposed to the technological aspect in developed countries. Quality expectations are also lower in developing countries. Customers may be more tolerant towards inefficiency and are more likely to be satisfied with a merely “good” service as opposed to an “excellent” service. This reduces the incentives to continuously make innovations in service quality in developing countries.

Access is another crucial aspect of a service and includes mostly timely communication with the service supplier. However, modes that provide the easiest and fastest access such as telephone and e-mail are hardly reliably available in many developing countries which increases the importance of direct contact between the supplier and buyer in comparison to developed countries. Understanding the customer, or more specifically understanding their needs in order to customize the relationship is very difficult to accomplish in developing countries due to a lack of data. Firms in developing countries keep their competitive edge almost exclusively via price cuts, and are focused mostly on providing service benefits, as opposed to customized services and lifestyle benefits in developed countries.

As for competence, collectivist societies in developing countries project this competence onto the organization, whereas in developed countries competence is associated with the individual employees. This is further characterized by a large power distance in organizations in developing countries as opposed to their developed counterparts, and the lack of accessibility of high management levels to customers. Since customers do not distinguish between the service provider and service, personnel should maintain a level of courtesy that respects and reflects customers’ views. In developed countries, this places emphasis on individuality and respect of privacy, but in developing countries, this is expressed via local cultural and social norms.

Communication of service quality is also fundamentally different in developing countries, evidence is generally collected from endorsements from satisfied customers, brand image, and social factors such as word of mouth from friends and family. Furthermore, due to the collectivist nature of developing

countries' societies, public benefits of the service are likely to make a larger impact on its acceptance than individual benefit. Credibility is one of the determining factors of use of the service, thus considering the collectivism of such societies service providers are likely to successfully establish credibility by focusing on the company's tradition and importance to society, rather than individual accomplishments.

Tangibility of the service is somewhat easier to measure in developing countries as they place a larger emphasis on the core service in terms of functionality, rather than the added aspects and extended benefits of the service which are relatively more important in developed countries. Based on the above hypotheses on the dimensions of service quality, the environmental differences between developed and developing countries can strongly influence the determinants of service quality.

Successful marketing in developing countries should take into account the various environmental, institutional, economic and cultural differences and should aim to create a unique marketing approach that is better suited to local conditions and will create more value for its customers.

5. Trenchless Firms and Their Marketing Strategies

In this section the marketing strategies of firms that produce materials or machines for various trenchless projects and companies that execute projects in developing countries.

Relineurope AG (RE) has its headquarters in Rohrbach, Germany and is a member of the RELINE UV®-Group, which provides worldwide comprehensive services in trenchless pipe rehabilitation technologies. These include applying the technology and providing installation support; including on-site training for personnel, construction site support and troubleshooting, as well as technical support and engineering solutions at any stage of a rehabilitation project and consultancy services for complex projects. Additionally, Relineurope uniquely provides comprehensive hands-on basic and further training in trenchless sewer rehabilitation with their RELINEACADEMY programme. They provide theoretical and practical knowledge of the most innovative methods and materials such as UV-units and robot technology, as well as provide quality assurance and project management insights.

Their website offers comprehensive information on the company, their unique Alphaliner and UV Technologies product offerings and the main services performed by the company – application and installation, technical support and engineering, and consultancy services. Aside from general information on the website, Relineurope offers a brochure for its Alphaliner and UV Technology (Alphaliner®, n.d.).

The UV Technology brochure places a strong emphasis on the quality assurance and technical aspects and benefits of the product. First, they describe the benefits of using UV light sources for the curing process and the technical function of the UV method, followed by a detailed overview of the technical specifications of the individual product offerings, two models of UV mobile and UV professional (Powerful technologies for UV curing of GRP pipe liners, n.d.)

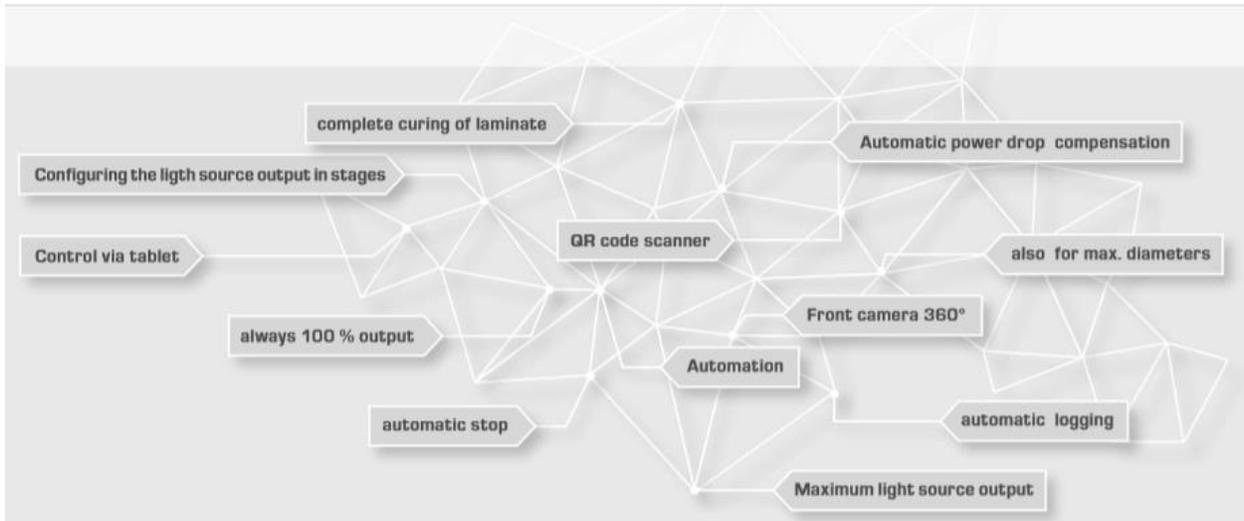


Fig. 1 – UV curing system specifications, Relineurope UV Equipment Brochure (Powerful technologies for UV curing of GRP pipe liners, n.d.)

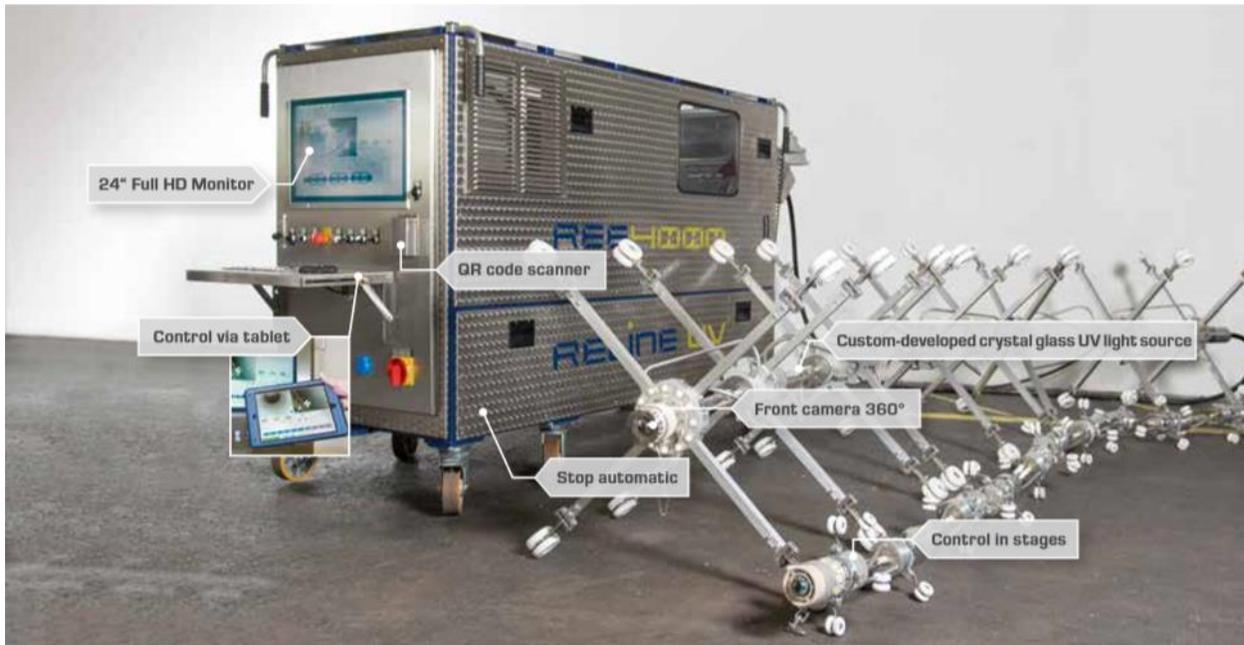


Fig.2 – The REE4000 UV.mobile UV curing system components, Relineurope UV Equipment Brochure (Powerful technologies for UV curing of GRP pipe liners, n.d.)

The final pages of the brochure are dedicated to the various supporting services that Relineurope offers in conjunction with their products, such as setup of rehabilitation systems, service vehicle provision, miscellaneous equipment and service and maintenance support remotely and on-site. The UV technology brochure is mostly focused on technical details and specifications and gives little in terms of information

on non-technical benefits, targeted mostly at contractors and service providers that rely on technical information to make a purchase decision.

The second brochure available on the site is the Alphaliner brochure dedicated to sewer rehabilitation GRP pipe liners, although it also features broader company information. In the introduction of the Alphaliner there is a focus on the general process and benefits to the customer: the speed of curing times, the economic benefits and the longevity of rehabilitated pipes. It details the technology's flexibility, safety and convenience as well as the significantly reduced obstructions, debris, noise and downtime of the pipe line. The environmental friendliness of the Alphaliner is also emphasized: low CO2 emissions, no chemical handling on-site and no energy-intensive hot water or steam production. The entire rehabilitation process is explained simply in five steps: preparation, installation, curing, leak testing, and completion, which can be done in a single workday for most standard projects. Product offerings for municipalities and industrial clients are presented with the benefits that they offer to customers.

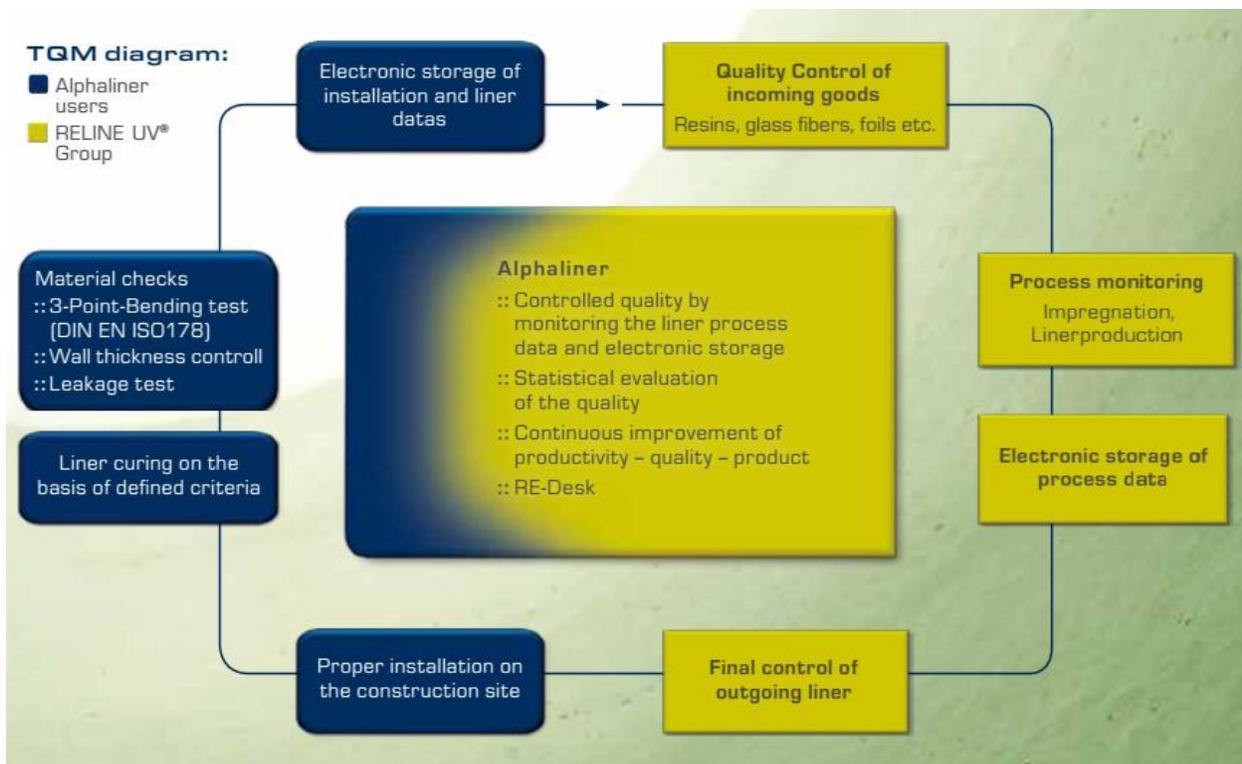


Fig. 3 - Total Quality Management diagram, Relineurope Alphaliner Brochure (Alphaliner®, n.d.).

Special attention is paid to the Total Quality Management feedback system which ensures the quality of the liner, process and results.

The Alphaliner brochure is significantly more customer-oriented, focusing on quality and practical benefits of the technology and presenting solutions for both municipal and industrial customers.

Aside from these, Relineurope has their unique Relineacademy programme, which provides in-house seminars and training for partners in order to support the spread of modern technologies and the capability of partners to work with the highest standards of quality. Training on the technology of pipe liners, high tech equipment, project management and quality assurance is provided in theory and practice is provided (Seminars 2017 Trenchless Sewer and Pipe Rehabilitation, 2017).

Rohrtechnik International (RTi) is an Austrian-based firm that deals in pipe rehabilitation and one of the largest contractors in the field in Europe. The company operates an extensive network of subsidiaries across Europe and also deals in manufacturing materials for trenchless projects under the brand NordiTube.

Other than Austria, Germany and Western Europe, RTi operates in Poland, Romania, Slovakia and the Asia-Pacific region and has dealt in trenchless rehabilitation of piping systems for 35 years. Their service portfolio includes rehabilitation of gravity pipes and pressure pipes, structural rehabilitation, pipeline construction, outdoor installation, CCTV inspection and analysis, and Software.

The website offers the customary company information and history, along with a page of references – previously completed projects with details on the time, place, method used and technical specifications of that particular project. Their website provides information on rehabilitation, civil engineering and

inspection which are the main types of services offered by the company, and a 23-page brochure about their service offerings.

The brochure itself is divided into three categories in accordance with the three main service categories, namely rehabilitation, civil engineering and inspection. The service overview page also has a large “what you may expect” section which highlights the importance the company places on its quality, know-how and innovation. (Rohrtechnik International Solutions for a Cleaner Environment, n.d.)

Overall, the service descriptions are aimed at the end customer and really emphasize the benefits to customers over traditional methods such as preservation of surface infrastructure, minimal traffic disruption, low noise and dust pollution, low CO2 emissions, short turnaround times, cost-efficiency, et cetera. While some technical specifications are present in the brochure, such as suitable dimension and material ranges for the specific method, emphasis is on the basic function of the method and its distinct qualities. The brochure features an “advantages at a glance” section for each method which summarizes these characteristics in a simple format.



Fig. 4 – Advantages at a glance, Rohrtechnik international brochure (Rohrtechnik International Solutions for a Cleaner Environment, n.d.)

Overall, the brochure is much more customer-oriented and can be understood by someone without particular knowledge about trenchless methods. This can be contrasted with the Relineurope UV technology brochure which is more so oriented towards business partners and other service providers with its technical content. Similarly, the NordiTube subsidiary material production company's brochure is also very technically oriented in terms of its offerings, with technical details aimed at service providers. (NordiTube Technologies Trenchless Pipe Rehabilitation, n.d.)

	PRESSURE				GRAVITY	
	NORDIPIPE	NORDIFLOW	TUBETEX	r.tec® CLOSE FIT	NORDIWALL	UNILINER
Application area	Sewer, Water, Industry	Sewer, Water, Industry	Water, Gas, Industry	Sewer, Water, Gas, Industry	Sewer, Industry	Sewer, Industry
Special application	<ul style="list-style-type: none"> • NORDIPIPE PE Pull-in system • NORDIPIPE PP Inversion system 	<ul style="list-style-type: none"> • NORDIFLOW Inversion system 	<ul style="list-style-type: none"> • TUBETEX COMBI LINER Additional felt 	<ul style="list-style-type: none"> • 100 % PE without gap 	<ul style="list-style-type: none"> • NORDIWALL HT High temperature up to 120°C • NORDIWALL FLEX very flexible felt • NORDIWALL SUPER FLEX Lateral (DN 50mm+) 	<ul style="list-style-type: none"> • Big dimensions • High wall thickness
Diameter*	150–1400 mm	150–1200 mm	80–1200 mm	150–400 mm	150–1200 mm	150–1800 mm
Material	Glass fibre reinforced felt	Glass fibre reinforced felt	Round woven polyester yarn	PE 100 PE 100 RC	Polyester needled felt	Polyester needled felt
Coating	PE or PP-PE copolymer	PE	PE, TPU or Hytrel™	/	PE or PP	PE or PP
Resin	r.tec 582-25 OF NORDIPOX D	r.tec 582-25 OF NORDIPOX D	r.tec 512-22 NORDIPOX TX	/	r.tec 521-26 UP	r.tec 521-26 UP

Fig. 5 – NordiTube pipelining technology systems, NordiTube Technologies brochure (NordiTube Technologies Trenchless Pipe Rehabilitation, n.d.)

SAERTEX multiCom GmbH is a subsidiary of the SAERTEX GmbH & Co. KG family company. The family operates in a number of industrial fields, from aviation to shipbuilding, win energy and trenchless pipe lining. SAERTEX multiCom is one of the leading manufacturers of fiberglass liners worldwide, using a UV-curing method which has increased installation security, storage stability and more economical installation compared to the commonly used heat and steaming methods. Their services include manufacturing custom materials, application engineering and also providing training sessions for partner

companies and system users, with a goal to ensure the material and installation processes are up-to-date and provide the best quality for customers. The company provides an image brochure for the company operations as a whole and several short flyers concerning different types of liners and materials on the company's portfolio, as well as a SAERTEX-themed 2018 World Cup schedule for any football connoisseur.

The image brochure, which is the main general promotional material, introduces the company, its legacy, global presence and achievements in quality and innovation (Lining Solutions for a Future Life, 2018). It emphasizes in-house production with a guarantee of on-time delivery and accountability in quality control. Working as a general company presentation, there is a lack of technical focus in the brochure and it is heavily end-customer oriented as it generally presents the company's services and operating scope with emphasis on customer value.



Fig. 6 – Advantages at a glance of pipe rehabilitation. SAERTEX multiCom image brochure (Lining Solutions for a Future Life, 2018)

The customer orientated thematic persists throughout the company's promotional materials, and the flyers also facilitate a simple, clean-cut presentation of the SAERTEX liners. Each flyer consists of a page detailing the conditional limitations and dimension/performance specifications of the technology presented, with another dedicated to showing the general installation process in a very simple way that doesn't require any complex understanding of trenchless terminology from the viewer (SAERTEX-LINER® (Premium), 2018).

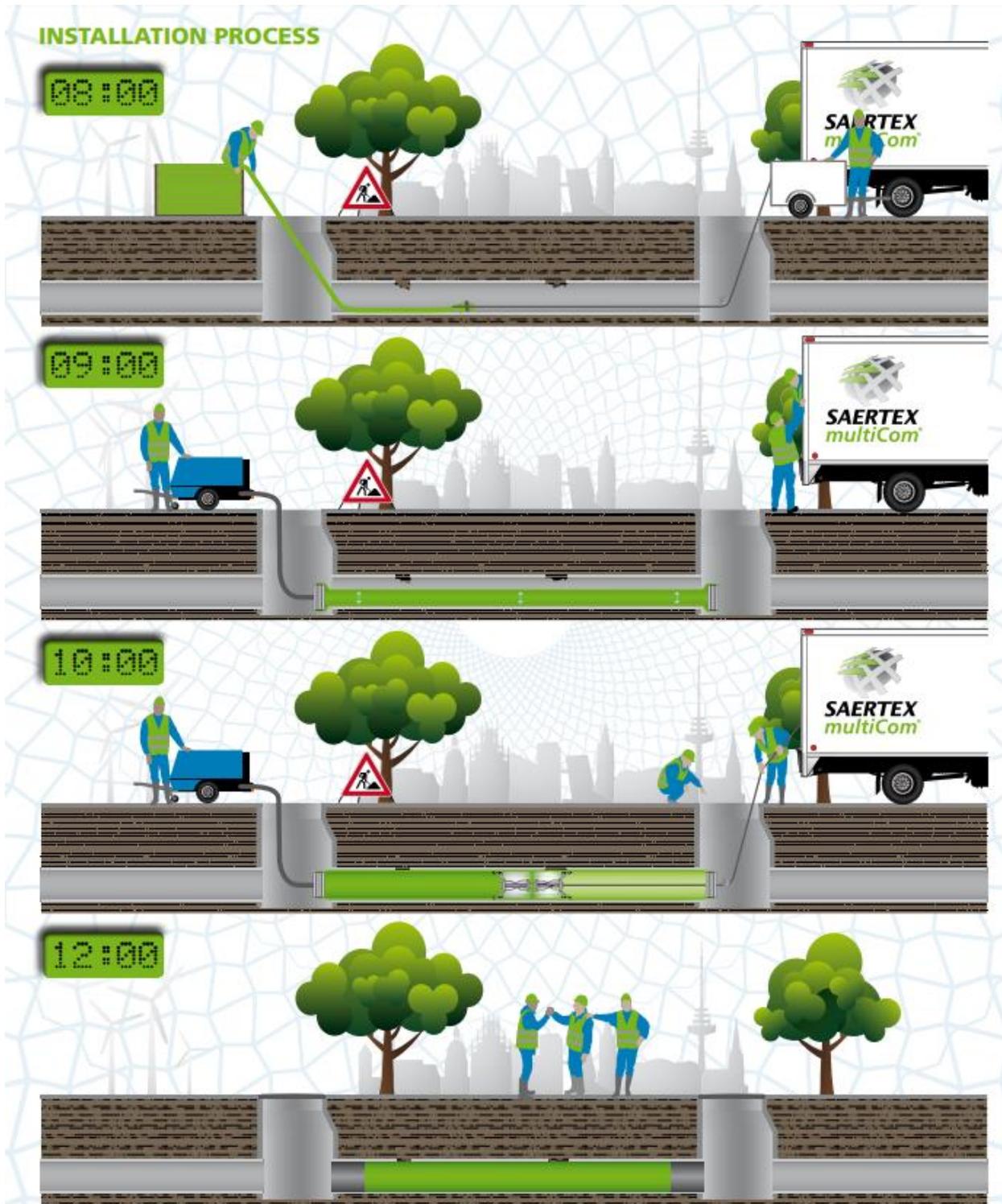


Fig. 7 – Installation Process. SAERTEX-LINER Premium Flyer (SAERTEX-LINER® (Premium), 2018).

Additionally, the short flyers for materials, such as a shaft liner and UV-cured material are also presented without complex terminology and provide a 'benefits at a glance' section for the customer to review (SAERTEX® multiFlex 4.0, 2018; SAERTEX-LINER® Shaft, 2018).

Overall, SAERTEX multiCom's approach to promotional materials is evidently much more tailored to suit the needs of the end customer. This allows for a wider audience in promoting the company's products as there is no technical entry barrier to understanding the contents of the brochure and flyers. This type of promotional activity can address the issues of lack of prior knowledge about the process by the clients which is likely to be of assistance in marketing in countries where trenchless methods are little or not known at all. Furthermore, the company facilitates 'information days' for municipalities, water purpose associations and other interested parties during which trenchless products and rehabilitation methods are introduced under the motto "trenchless rehabilitation for beginners".

6. Barriers to the Application of Trenchless Methods

The following segment discusses the practical issues experienced by firms in marketing to developing countries via an in-depth interview with Mag. (FH) Reingard Schmidt, Marketing Manager at RTi Rohrtechnik International GmbH. The latter part briefly presents the barriers created by international organizations for development due to the lack of financial support for trenchless projects in developing countries.

6.1 Practical Issues and Barriers

In order to gain some practical insights in connection with the issues discussed in theory in earlier sections, a semi-structured in-depth interview with Mr. Schmidt of RTi Rohrtechnik International will address the

practical side of issues concerning the application of trenchless methods in developing countries. The interview revolves around RTi's practical experiences with some of the issues that theory suggests are present in marketing and generally doing business in developing countries.

The most sizeable differences between operating in developed and developing countries are related to the process realizing the projects: the financial situation and project execution are the most common questions arising in developing countries that are not a problem elsewhere. While the need and demand for new infrastructure in developing countries is undeniable, the biggest obstacle in realizing a no-dig project is financing. Often times clients and institutions are unable to fully finance these projects and trenchless companies research various funding possibilities for developing countries. One such example, in the case of RTi, is soft loan financing via the Austrian National Bank. Contractors from countries that are eligible can receive a low interest rate, long repayment term and grace period loan in order to finance Austrian exported projects that they would not be able to afford under regular financing conditions (Concessional financing (soft loan), n.d.).

However, a big issue with soft loan financing is the sheer amount of time it takes to complete the process. There are several steps of application and approval to go through and this process is very time-consuming. Additionally, there is always the risk of an abrupt change of government in the developing country and progress in the financing steps is lost, meaning the process has to be re-started from the beginning. Mr. Schmidt specifically mentions a soft loan project in Mongolia that took six years to advance from the first contact to beginning the project execution. In comparison, the duration of the project work itself is usually very short.

Furthermore, most developing countries do not possess the expertise necessary for trenchless pipe rehabilitation. This poses a problem for project execution because it introduces several constraints to operations. In industrial countries, several companies with experience in pipe rehabilitation can be found.

When executing a project in an industrial country where RTi has no subsidiaries of its own, there is a plethora of experienced partners available to work with. This also creates the possibility of executing big projects in a consortium with one or more partner companies. In developing countries, this is not possible due to a lack of experience with trenchless technologies. Engineers in water companies or municipalities possess good knowledge of pipe operation, but mostly do not know how to pipe rehabilitation works. It is often up to the partner to train them and demonstrate how pipe rehabilitation functions. If there is a funding possibility, RTi often initiates long-term collaboration with pipe operators in developing countries. Partners are provided with trenchless equipment and trained in its usage, gaining the capability to execute future projects independently on-site. In the case where there is no possibility to purchase the equipment or there is a one-time project, staff from the RTi company group execute the project.

With regards to marketing strategy, Mr. Schmidt comments that building good relationships with partners is always important. This is the same in building relations with developed and developing countries' firms, and RTi does not take any specialized marketing approaches in marketing in developing countries. They also do not employ classic means of advertising for NoDig technologies. As a marketing strategy they position RTi as a competent partner for trenchless technologies. As they have worked in the field for over 30 years with every kind of piping system (sewage, pressure, and industrial pipes), this experience makes the company an expert in the field and is important to convey in marketing efforts.

Another point of emphasis in RTi's marketing strategy is their "all from one source" motto, under which they provide the entire range of pipe rehabilitation technologies, from material and equipment to technical support. They also produce their own liner systems, essentially creating a "one-stop shop" for pipe rehabilitation solutions. In addition to this, RTi always strives to develop new products and be at the forefront of innovation, from adapting the sewage cured-in-place liner for the use of pressure pipe rehabilitation more than 25 years ago, to their newest NORDIWALL HT product, which is resistant to

temperatures of up to 140°C which allows for rehabilitation in high-temperature conditions. A very important aspect of marketing for trenchless technologies is using previous well-executed projects as references for future projects. Customer satisfaction is an invaluable marketing tool, as well-executed and high-quality projects spread awareness and helps immensely in securing new projects for the company. While RTi doesn't employ and special marketing approaches in developing countries, Mr. Schmidt did comment that the most important aspect is to get in touch with the right person – a decision maker with the authority to decide whether to use a pipe rehabilitation project or not.

6.2 International Institutions and Barriers

In the previous section, the issue of financing projects in developing countries was briefly discussed. It is evident that aside from the business-related issues in developing countries, there exists also the issue of international aid and financing agencies. Aside from the soft loan example above, numerous programs for providing aid in development are in place, and many concentrate their efforts on water provision and infrastructure development. Clean water and sanitation is listed as Goal 6 of the United Nations' Sustainable Development Goals and a vision of the 2030 Agenda for Sustainable Development. According to the African Development Bank Group, 72% of Africa's poorest countries have no access to improved sanitation facilities, but investments in sanitation total less than 0.1% GDP in most countries. Only 3% of

Africa's poorest countries' population gained access to improved water sources from 2005 to 2012.

("Infrastructure Development", n.d.)

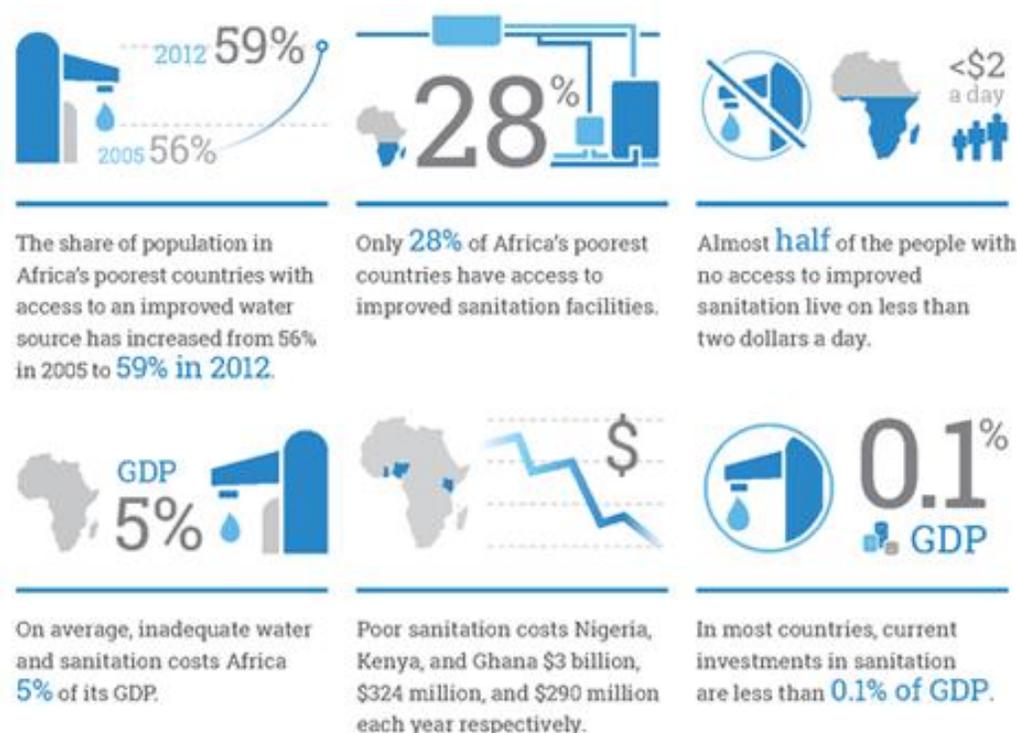


Fig. 8. Water and Sanitation. Retrieved from Infrastructure Development (n.d.)

<https://www.afdb.org/en/knowledge/publications/tracking-africa's-progress-in-figures/infrastructure-development/>

Infrastructure deficits create opportunities to utilize newer, more efficient technologies, according to the AFDB. Despite this, trenchless technologies are not given any attention by many organizations such as the European Commission, African Water Facility or the International Institute for Sustained Development. The European Union alone jointly allocates \$1.5 billion on a yearly basis for water and sanitation programmes in developing countries ("Water and sanitation - International Cooperation and Development - European Commission", 2016). However, trenchless methods are not often eligible for their generous grants and implementation support, which further raises the effective cost of applying trenchless technologies in water and infrastructure projects in developing countries. While significantly aiding in alleviating short-term water and infrastructure deficits, these institutions involuntarily curb

incentives to invest in more advanced, future-proof technological solutions now, as they are likely to become necessary in the long-term development of countries that lack adequate water infrastructure.

7. Discussion & Conclusion

The following, and last section will summarize the findings of this research and reach a conclusion with regards to the research questions posed. 7.1. will recap the main findings and connect the theoretical observations in the first sections with the later sections' observations on practices. 7.2. will apply these findings to answer the main research question and sub-questions, and 7.3. will acknowledge some limitations of the research and give propositions for further elaboration into the topic.

7.1 Discussion

In sections 2 and 4 the specific environment for conducting business in trenchless technologies is discussed. The NoDig field is mostly a business-to-business field, with clients usually being other firms or organizations. Notable previous research seems to suggest that B2B firms are more likely to engage in direct contact with customers and practice interaction and network marketing (Coviello and Brodie, 2001). Indeed, the most important aspect in marketing, according to the qualitative interview is maintaining a good relationship with (potential) partners. In contrast, traditional marketing methods are relatively unpopular and mostly unused by trenchless firms in favor of more interpersonal and word-of-mouth approaches. Most trenchless firms utilize promotional materials such as brochures and flyers to inform customers about their general services, including operating methods and available machinery, but do not advertise in traditional channels such as industrial magazines and the like. Rather, the most important marketing step is establishing contact with a potential client. Business relationships and negotiations

generally take place at (upper-)management level and interaction is the greatest key aspect of marketing trenchless technologies (Coviello and Brodie, 2001).

Furthermore, trenchless firms have a propensity to customize their services for each and every client as their promotional materials tend to emphasize. This is in line with what theoretical research suggests about the importance of having insight into customers' operations in order to deliver the best possible products and services. Such adjustments are believed to increase payoff and customer satisfaction significantly (Avlonitis and Gounaris, 1997). This is likely a big reason for the focus on personalized services in trenchless methods, as flexibility and adaptation increase the scope of projects a given company can undertake and increase their capability to compete for contracts with other firms.

While these are all typical characteristics of business-to-business firms that are widely discussed and agreed upon, they are generally discussed in the context of industrial and western countries. Because trenchless technologies are essentially infrastructure work at varying levels, the opportunity for their application in developing countries is exceptional. However, the business environment in developing countries differs significantly from that of industrial countries. The different socioeconomic system, the presence of rapid changes in society and issues with undereducation are several institutional factors that separate developing from developed economies. A change in approach is required to create sustainable demand in emerging markets (Yujuico and Gelb, 2010). Common institutional factors that impede business operations in developing countries are corruption and bureaucratic process length, as well as instability of market demand according to Cassia and Magno (2015). The interview with RTi's marketing manager confirms that these issues are indeed encountered in practice, with bureaucratic procedures delaying negotiations and projects as long as several years, during which political instability may negatively affect demand and undermine or possibly collapse ongoing negotiations for contracting projects.

An issue with business-to-business operations in developing countries that isn't often discussed in literature but very prevalent in the trenchless sector is financing. This applies specifically to trenchless projects because they are infrastructure creating and quality of life improving for the local community but require sizeable investments and are not economically viable by themselves. The necessity to finance these projects externally often delays the process significantly as mentioned earlier as financing with favorable conditions is tied to various international organizations for development and involves a long bureaucratic process that significantly complicates the negotiating process as in the example of concessional or soft loan financing, the contractor and customer are both involved in the application process and must pass several stages of approval before financing can be approved and the contract finalized.

Another issue in the environment of developing countries discussed in literature is the lack of qualified personnel for partnerships and the difficulty in recruiting and training local agents (Cassia and Magno, 2015). Trenchless firms tackle this by systematically offering comprehensive training programs as part of their service portfolios to ensure high-quality services and spread innovations and know-how throughout the field of trenchless technologies. Commonly, firms will form partnerships and train on-site personnel to work with trenchless methods and equipment, allowing them to purchase machinery and conduct future projects independently. Furthermore, contractors can also offer information days and promotional materials that explain in simple terms the basic process of trenchless pipe rehabilitation which ensures lack of knowledge and understanding about the method is not an issue for customers and they can make a logical, informed decision on whether to use trenchless solutions.

Lastly, the process of communicating service quality in developing countries is significantly different, according to Malhotra, Ulgado, Agarwal and Baalbaki (1994). Service quality is mostly communicated through testimonies and endorsements from satisfied customers in trenchless services, although based

on the focus on this method of firms via reporting on successful projects on their websites and highlighting notably difficult or exceptionally executed projects on their websites in reports and videos, this method seems to be universal for the field, rather than an adaptation to the circumstances of developing countries. According to RTi marketing manager Reingard Schmidt, customer satisfaction is an invaluable marketing tool which helps in securing new projects for the company by using previously well-executed projects as references.

It can be seen that trenchless firms do indeed identify and conform to the circumstances of conducting business-to-business marketing in developing countries with tailored solutions to many of the issues that arise, and that there are still outstanding issues with institutions, bureaucracy and financing.

7.2 Conclusion

The purpose of this research has been to identify the marketing strategies of trenchless technology companies in developing countries. Previous research into business-to-business marketing specifics and irregularities in the business environment in developing countries indicates that there exist differences in optimal business approaches in developing and developed countries. While the general marketing methods of trenchless companies are mostly similar in both emerging and industrial economies, with the usage of relationship-oriented marketing and testimonials of previous projects and customers as the main driving forces behind marketing and negotiating efforts, there are some observable barriers to the smooth execution of these strategies in developing countries.

Firstly, there is some difficulty in initiating negotiations for a project due to lack of understanding of trenchless methods by potential customers. This is remedied by conducting informational sessions with

customers and distributing customer-oriented promotional material which explain the basics of trenchless methods. Firms also emphasize communication in order to best identify customers' needs and understand their circumstances. Second, there is the issue of executing the project due to the lack of capable local personnel, which is addressed by firms by way of conducting training for on-site staff to understand and successfully apply trenchless methods in their projects. Third, financing can be a difficult obstacle in trenchless projects because they are not economically viable and require financing with favorable conditions, which is usually done through international organizations and programs and involves bureaucratic processes that significantly increase the difficulty of negotiation and contracting. It often falls on the contractor to identify the eligibility of a project and initiate the process and presenting financing options to the buying organization is another important marketing effort. Due to the bureaucratic nature of the process, however, and the factor that end-customers are often governmental institutions, negotiations can take up to several years, with the danger of political instability undermining or fully invalidating existing progress. This means that some trenchless projects will require years to actually execute and require lengthy and potentially risky time, effort and capital investments before work can actually begin on a project, acting as a deterrent for companies that cannot take substantial risks and creating barriers to entry in the market.

Overall, trenchless technology companies adapt well to the unique circumstances of marketing in developing countries by focusing on information exchange, communication to identify the needs of clients and demonstration of service quality via customer satisfaction with previous projects. They address regional issues by training personnel on-site and sharing expertise and know-how in trenchless methods and aiding clients in securing favorable financing conditions to improve infrastructure and living conditions. Operating in developing countries still carries unavoidable risks for firms, however, in the uncertainty of successful negotiation and unpredictable political issues in the region.

7.3 Limitations and Recommendations

This paper aims to shed light on the unique conditions of marketing trenchless technologies in developing countries. There are several aspects to this that are outside of the scope of the paper but could potentially be of interest for future research. Firstly, the focus is on the marketing of European firms in the field. It does not take into account other regions that may have significantly different strategies and experience different problems in operating in developing countries. It may be of importance to examine the behavior of firms based in other regions to attain a more comprehensive understanding of the topic. Second, there may be differences in attractiveness and profitability of projects in developing countries that affect firms' willingness to enter emerging markets. Research into this topic could reveal other issues and motivators for firms that can be of importance. A third issue is that this paper does not examine trends in the field over time. Possible quantitative research could provide insight into the evolution of the process of application of trenchless technologies over time. Lastly, institutional and political factors are outstanding issues in the market for trenchless technologies in developing countries that are not examined in-depth in this paper but are important aspects to address if the conditions for marketing trenchless technologies in developing countries are to be improved in the future.

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