From the Osterwalder canvas to an alternative business model instrument

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The Osterwalder business model canvas (BMC) is used by many entrepreneurs, managers, consultants and business schools. In our research we have investigated whether the canvas is a valid instrument for gaining an in-depth, accurate insight into business models. Therefore we have performed initial multiple case study research (cf. Methodology), which concluded that the canvas does not generate valid business model (BM) representations. In our second multiple case study, we have constructed an alternative BM framework, on the basis of which we have finally built a BM tool to design, evaluate and re-design any business model.

Methodology

The research protocols for both multiple case studies are quite similar. Hence Figure 1 only shows the protocol for our second (and main) research. To test the validity of the BM canvas (protocol I) we used four cases - three medium-sized companies (orthopedic sector, laboratory equipment wholesale and bake-off production) and a case ‘zero’, the latter being somewhat atypical in terms of data collection since it was the author’s own (former) health narrowcasting (small) company, hereafter called HTV¹. The second research study comprises 11 cases², all companies being SMEs.

The data (in both studies - except for case zero³) were collected from multiple sources: (i) two in-depth open interviews per case (conducted by two researchers and one or two masters student trainees) with the management director(s); (ii) a 14-week full time internship for the masters students (per case) to support the management team, observe the key informants and collect informal data; (iii) formal company data; (iv) one or two focus interviews (same interviewers as the open interviews) with key informants to check the BM synthesis and insights. This data triangulation strengthened the data consistency. The open interviews were transcribed and all relevant data were coded (with Nvivo software) independently by two researchers and the student-researcher⁴. During research team meetings, the coding results were compared so that convergence could be reached (e.g. in some cases the distinction between ‘value’ and ‘resources’ was unclear), the BM representations were discussed and fine-tuned. The researcher triangulation augments the reliability of the research results. Each case’s data analysis and synthesis comes down to an intensive interaction between the visual and textual representations (in both protocols) to understand the improvements needed in the next phase of the case. In protocol I, filling in the nine building blocks of the BMC was the synthesis of detailed descriptions and rephrasing of these to get to the essence of each BMC component.

The insights from the four cases in our first study were largely sufficient to summarize the limitations of the BMC, the latter being input for the second multiple case study. In this second protocol (cf.
Figure 1), the use of both deductive and inductive research was important: the state of the art theory on the BM construct was essential as a starting point, but in the elaboration of the BM tool through the 11 cases the construct needed to be operationalized. Each investigated case augmented the insights from the previous cases so that the multiple case study becomes more externally valid. The results of both research methods were integrated into the section on the BM concept.

The business model concept

Based on the literature and our in-depth multiple case studies, we summarize the essence of the business model as follows. The final objective of the business model is to explain the extent to which the competitive advantage – or the ‘firm’s success’ - can be sustained\(^5\). This competitive advantage is mainly the result of resources and capabilities (hereafter key resources) that are difficult to replicate, less substitutable and more complementary\(^6\). In other words, our approach recognizes the importance of the resource-based view and the more recent literature on dynamic capabilities (the latter especially when we come to explain the importance of key resource accumulation). Key resources can be tangible, intangible or financial, are owned by BM participants (i.e. the focal organization (FO), key employees, key suppliers, customer segments or other stakeholders) and are deployed in and/or built up through the system of key activities\(^7\). This system, i.e. the content of the activities, their interconnections and the participants involved, explains the value created and appropriated by participants. In the medium to longer term, the key resources of the BM are accumulated (especially by the FO but also by other participants) as a consequence of either the value appropriation or the key activity itself. We will explain these relations and dynamics extensively in the cases of HTV and Finax.
In summary, the business model is a system of key activities explaining (1) the value creation and appropriation by participants, as well as (2) the deployment and accumulation of key resources (Figure 2). Any business model can be designed by means of four ‘containers’ (participants, key resources, key activities and value) and their dynamic interaction. Since the BM approach facilitates explanation of the key roles of all participants, it transcends the boundaries of the company or organization, the latter remaining obviously the focus of the BM.

Value is primarily created for customer segments and the FO. The business model approach enables the total value offered to customer segments to be mapped, from the value proposition (or ‘core’ value, e.g. the bundle of products and services offered, the price, usability, customization, design etc.) to the convenience of delivery, payment facilities, customer service etc. Value for the FO is primarily financial. The revenue model (i.e. how revenue is generated), sales prices and volumes, the cost structure and margins are integrated into the business model. If the products of gross margins (sales price minus direct costs) and respective (i.e. per customer segment or per product) sales volumes accumulate into a sum larger than the fixed costs, the focal organization is capturing value in the form of net profit. If another participant (i.e. besides customers and the FO - e.g. a key supplier) is playing a crucial role, the business model explains how value is captured by this participant. Once the current BM has been designed, the FO can evaluate whether the value captured by a key partner is commensurate with the partner’s (strategic) importance in the BM.

Value drivers can be specified in the activity system, since they enhance the value creation. The novelty driver is related to innovation in the activity system, i.e. on the level of content (novel activities), structure (novel links between activities) and governance (novel participants). Lock-in activities refer to switching costs or incentives for business model participants. Interdependencies between activities can create additional value (complementarities) or cost savings (efficiency drivers).

Figure 2: The Business Model Concept
Cases
Of the 14 cases, we are presenting some of the results from two SMEs. The main insights and conclusions for building the BM framework and the tool can be generalized across all of the other cases we have studied, regardless of the sector to which these companies belong.

HTV
Operating on the Belgian market from 2007 until 2011, this limited liability small enterprise was managed by the author of this paper, together with three other members on the board of directors and three full-time employees. Its core business was to offer a health-related narrowcasting channel (hereafter abbreviated as HTV) in gynaecology waiting rooms (individual, group and hospital practices). Narrowcasting can be described as showing differentiated content depending on the target group. The physicians and hospitals can select the playlists, time schedules and screen locations to narrowcast the content, the latter being presented in a time loop which can be adapted to the average waiting time of patients in a specific waiting room.

The HTV revenue model is an advertising model based on a triangular relationship: if a gynaecologist participates (for free), patients can watch HTV in the waiting room and advertisers pay for the air time to reach this audience. The revenue model assumes a critical size of audience to boost revenues so that the cash drain diminishes. This cash drain (during the first years of the start-up) is caused by growing fixed costs of flat-screens (owned by HTV – cf. infra), installation, software licenses and labor costs (resulting from the recruitment activities). Hence the revenue model and cost structure imply initial key (financial) resources, i.e. venture capital and an investment credit.

Finax
Finax specializes in financial coaching and provides customized advice about insurance, loans and investments for private individuals, the self-employed and SMEs. Based on the information from the intake conversation with the prospect, a profile and risk analysis is carried out, after which the financial advice is elaborated. If the prospect agrees with this advice, the products are purchased and the contracts executed. The follow-up involves the handling of claims and preparation of the check-up, the latter taking the place of the intake in subsequent cycles, once the prospect has become a customer with a profile that will be updated regularly.

Is the BMC a valid business model tool?
Osterwalder et al. define the business model as ‘the rationale of how an organization creates, delivers and captures value’. They have decomposed this general construct into nine distinct elements, so-called building blocks, represented in a fixed structure as shown in Figure 3. The value
proposition is at the heart of the canvas. It describes the bundle of products and services offered to customers. The main customer segments are listed in a separate building block. Channels summarize how awareness of the proposition is built, how the offer can be purchased, delivered and evaluated, and what post-purchase support is provided. In addition, there is a building block explaining which customer relationships are established. These four customer value-related building blocks imply specific revenue streams, which are explained at the bottom right of the canvas.

The five building blocks as briefly explained above require key activities and resources, the financial consequences of which are summarized in the cost structure. A final building block lists the partners involved in one or more of the other eight elements.

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key Activities</th>
<th>Value Proposition</th>
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<td>Content providers</td>
<td>Installation &amp; configuration</td>
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<td>Gynaecologist &amp; hospital</td>
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<td>Legal compliance</td>
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<td>Federation of gynaecologists</td>
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<td>Playlist selection &amp; personalization</td>
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<td>Bank</td>
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<td>Narrowcasting configuration (hardware, software, installation)</td>
<td>Air time (high margin) as a function of the audience growth</td>
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<td>Car fleet &amp; office</td>
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<td>Volume discounts from partner-suppliers</td>
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Figure 3: The Osterwalder Business Model Canvas (BMC) - HTV case

The canvas is merely a juxtaposition of building blocks including shortlists of BM data. It does not explain the dynamics between the blocks (e.g. how activities contribute to value creation, or how key resources are accumulated through the activities) and by consequence only delivers a quick scan of the BM. There is also too much overlap between the blocks.

In the HTV case (Figure 3), there are three very different, but equally important customer segments. However, to understand the total value appropriated per segment, the four building blocks concerned (i.e. proposition, channels, customer relations and segments) should be better linked or integrated on the customer segment level.
Significant value can also be derived from customer relations (e.g. the involvement of sponsors and advertisers during the content creation, the latter being one of the key activities) or channels (e.g. the playlist selection by gynaecologists or the audience reports for sponsors and advertisers are features of the channel ‘narrowcasting configuration’). Allocating customer value to the proposition, the customer relation or the channel is therefore to some extent arbitrary.

The narrowcasting configuration (i.e. the network of flat screens and the software) is much more than a channel - it is first and foremost a key resource which is accumulated through key activities.

The other channel, i.e. the HTV team members recruiting the physicians to participate and the advertisers to buy air time, is very different and only relevant for two customer segments. Moreover, this channel generates substantial value for the FO (HTV), i.e. three-year contracts signed by physicians or hospital managers. It is not possible to allocate this value to the FO in the canvas.

Both types of channel are tightly linked to the key activities involved (recruitment of gynaecologists, recruitment of content, installation and configuration) but the underlying logical links disappear in the BMC.

If the value captured by a key partner is of critical importance for the sustainability of the BM, the canvas cannot include it. Generally, neither the role nor the importance of key partners can be derived from the BMC.

It is unclear how key activities and key resources relate to each other. In the case of HTV, the main key resources are accumulated through key activities and deployed in the ‘content distribution’ activity which delivers the core value.

In summary, the BMC does not offer a systemic approach for gaining in-depth insight into the value creation and appropriation, the importance or function of key activities and key resources, or the involvement of all key participants. To understand the BM for organizations, many of the BMC’s shortcomings can be overcome by starting from the key activity system as explained in the next section.

**An alternative instrument**

From our second multiple case study research we have concluded that any business model must be built up from its key activity system to understand the value creation and resource accumulation processes. However, during the open interviews, all managing directors spontaneously started to explain the value propositions for their various customer segments. In other words, it is not an
intuitive approach to elaborate the BM starting from the key activity system. Nevertheless, after intensive tests we have concluded that even by starting from the value for customers, we always arrived at the key activities as the core of the business model.

As we have demonstrated in the BMC, channels and customer relations can imply significant value on top of the value proposition – in some cases the channels and the proposition are tightly related. Hence, we have tested and concluded that we use value as a container concept for any business model participant. The value concept is specified by the BM user according to the key activities and participants involved in creating or capturing the value, be it the proposition or ‘core’ value to customers (additional services granted), the helpfulness of the salesperson in a shop, the net profit for the focal firm or the volume discounts granted by suppliers to the focal firm.

Of particular importance is the financial value captured by the FO. This comes down to a positive difference between the revenue (based on the revenue model) and the global cost structure implied by the key activity system. These costs and revenue streams are financial attributes of BM elements in the data model (e.g. the cost of key employees or external experts is linked to these respective participants, the leasing cost of machines is linked to this key resource, the revenue generated from a customer segment is allocated to a FO value element etc.).

The most common participants derived from our cases are the focal organization (or FO), the customer segments, the key suppliers and key employees. The latter become explicit participants in the BM as soon as they own capabilities that contribute to the firm’s competitiveness. All employees not labeled as such are assumed to be categorized in the participant FO. Any other stakeholder participating in one or more key activities is explicitly denominated.

The key activity system explains how the strategic choices of the FO are realized, or how the FO does business to reach its strategic objectives. In other words, the activities elaborated in the BM should be positioned on the right level. Decomposing key activities to reach their operational level is not the objective of the business model – it becomes business process management. However, once the BM user starts to denominate the ‘key’ value for the customer segments, the FO and other participants, he will need to explain how this value is created, so that he will more easily remain on the essential level of activities rather than breaking them down into too much detail.

Key resources cover all capabilities, assets (tangible, intangible or financial) or other resources that are deployed by any participant and are crucial for realizing the business in line with the strategic choices made. In some cases we have learned that value appropriation by a participant can accumulate in the latter’s key resources (e.g. net profit accumulating into substantial equity, co-
creation sessions providing knowhow on a higher level, confidence from customers built up through various value elements offered). In other cases the key resource accumulation is more of a direct result of one or more activities (cf. the HTV case) instead of being the result of value appropriation.

We have come to the following conclusions regarding the elaboration of a valid framework for a BM tool:

1. Define the key activities.
2. List the participants involved in each key activity.
3. List the key resources deployed in each key activity and connect them to the participant owner.
4. For each key activity, specify the value created and link it to the beneficiary participants.
5. Determine how the key activities are interconnected.
6. For combinations of key activities, specify the value created and link it to the beneficiary participants.
7. Determine the resource accumulation by participants as a result of value appropriation or key activities.

A BM tool following this framework should provide the flexibility to elaborate several of the seven steps simultaneously. It will help the user check the BM’s consistency more efficiently.

Finally, the interaction between the visual and textual representations of the BM is very helpful for arriving at a correct and consistent BM. Moreover, most visualizations do not reveal all of the nuances in e.g. the value creation and appropriation. The textual synthesis encourages the user to explain these nuances.

We present some interesting results from two cases (company names have been changed for reasons of confidentiality).

**HTV case**

Figure 4 serves as an initial visual overview of the HTV business model by focusing on the key activity system and the key resources. The sustainability of the HTV business model depends heavily on the accumulation of two key resources, i.e. audience and content. The audience resource is built up through the key activity of ‘recruitment of gynaecologists’. The network of waiting rooms is another key resource resulting from this activity.
The key resource accumulated through the key activity of ‘installation and configuration’ is the narrowcasting configuration, consisting of hardware (the flat screens in the waiting rooms) and software. The ‘content’ key resource is accumulated by means of both (available and new) content recruitment and content creation.

All the above key activities and resources result in the distribution of the content and the final key resource, i.e. the health television channel.

![Figure 4: HTV activity system (bold) and key resources (italic) – holistic level](image)

This BM summary is the anchor point for a more detailed BM scan – it keeps the focus clear. The activity system generates resources that are indispensable for creating value for participants.

Value creation and appropriation occur on the level of single activities. For each key activity, we specify the involved participants, the resources they deploy, the value for the beneficiary participants (i.e. the value appropriation) and the accumulated resources.

Firstly, we illustrate the value creation on the level of single activities, after which we turn to value creation on the holistic level of the business model.

Three participants are involved in the recruitment of gynaecologists, i.e. the FO (HTV), a customer segment (gynaecologist and hospital) and a partner (federation of gynaecologists). This partner communicates its HTV support to its members. The credibility that the federation has gained from its members is a key resource in the single key activity that creates value for the FO, i.e. more efficient recruitment (cf. ‘door opener’ value as an efficiency driver in Figure 5 – the inclusion of the federation in the BM is a tactical choice). The input of key resources by HTV consists of expertise (management and sales) and a car fleet. The resources deployed in this key activity are not reported on the holistic level as shown in Figure 4: they are relevant on the single activity level (and the cost...
structure) but easily imitated and thus have no differentiating characteristics on the holistic BM level. The accumulated resources of ‘audience’, ‘network of gynaecologists’ and ‘waiting rooms’ on the other hand have distinctive power.

The narrowcasting configuration (hardware, software, installation) is offered free of charge to gynaecologists and hospitals in exchange for a three-year contract that can only be dissolved against an indemnification. The contract serves as a lock-in value driver for the FO and the free user rights are a value driver for the customer to sign the contract.

Figure 5: Key activity in the HTV business model - recruitment of gynaecologists

The major part of value creation (and appropriation) takes place through the final key activity, i.e. the content distribution (the delivery of the service) in Figure 6. Since the main key resources accumulated in all preceding key activities are deployed in the content distribution, the latter will generate the majority of the total value. The ‘sponsors and advertisers’ customer segment can target specific audiences (efficiency driver), the patients perceive the context as reliable (content shown in the waiting room) and can ask questions of their gynaecologist during consultation. Saving time is an efficiency value driver for gynaecologists and the fact that they can customize the playlists serves as a novelty driver.
In understanding value creation, it is of particular importance to reveal the value drivers as illustrated above. We offer a last example in the HTV case, i.e. in the key activity of content recruitment. HTV management has reached a partnership agreement with two content suppliers using different channels to HTV (animation on websites and reportage on a broadcasting TV channel respectively). These partners present the offer to their sponsor (or advertiser) to reach additional audiences in the waiting rooms. If the sponsor agrees on the channel extension, a revenue split (on the HTV air time tariff) is made between HTV and the content partner (complementarity value driver for both participants). Besides the revenue, the focal firm captures value by enriching its content offer (efficiency driver).

Finally, to look at value from a holistic point of view, we select (from each key activity) the ‘core’ value for participants as shown in Figure 7.
Figure 7: Key activity in the HTV business model – value appropriation (holistic level)

**Finax case**

All customers are served through a cycle of five key activities (cf. Figure 8). The key resource that ultimately determines the success of Finax is the customer’s confidence. This is mainly built up through the intake, the check-up, the financial advice and the follow-up, while it is deployed in the purchase and execution (the customer approves the advice so that the products are purchased by customer service – this is equivalent to sale and delivery).

The other key resources feeding the confidence are the commercial and technical expertise and the customer service department, all linked to the activities as shown in Figure 8. Some of the resources are both deployed and accumulated. Financial advice to customers might require expertise as an input, but the expertise is also augmented by the activity.

In the ‘intake’ key activity, key employees (given the difficulty of replicating expertise, key employees are explicitly included as a participant) and management team members (the latter allocated to the FO Finax participant in Figure 9) are trained to listen to the plans, dreams and needs of the prospect, but also to steer the conversation based on the input from the prospect. Commercial solutions are not mentioned in this phase. The main resource deployed for this key activity is commercial/technical skills. These are included on the holistic level of the BM since they do not represent the usual commercial skills: after the meeting, the prospect (or customer) is left with a feeling of having spoken freely, having expressed his wishes without being pushed in any direction,
and yet the FO has gained insight into the potential. This skill includes a great deal of technical background to direct the conversation inconspicuously.

Figure 8: Finax activity system (bold) and key resources (italic) – holistic level

The legally obliged transparency is covered by a Finax ‘Services Document’ signed by the prospect. It explains who Finax is, what it does and how it works. For Finax the objective of this key activity is to determine who the prospect is, what he wants and whether he fits into the customer segmentation of Finax. For instance, a prospect only looking for the best price is of no interest for Finax.

Figure 9: Key activity in the Finax BM: the intake

Allocating customers to a specific segment is another expertise and implies differences in value creation. Finax distinguishes between two main customer segments, i.e. Fortunis and non-Fortunis customers. As soon as the key employee perceives the customer’s willingness to choose Finax as his
main supplier, the customer is labeled ‘Fortunis’. This segment is subdivided into ‘Value’, ‘Value+’, ‘Premium’ and ‘Max’.

The Fortunis customer starts in the ‘value’ segment. Unless the customer contacts Finax (the customer service) spontaneously in the event of changes to his personal situation (e.g. due to a divorce), the check-up for this customer is scheduled every five years. The activity is ‘key’ since the updating of the customer’s personal and financial status reveals whether or not his portfolio needs adjustment. Fortunis ‘Premium’ and ‘Max’ customers have a check-up every two years. Fortunis customers are labeled ‘Value+’ if they have a lot of growth potential. In that case, the check-up is scheduled twice a year.

The main value captured from the ‘check-up’ by the FO is the insight in the cross- and upselling potential. For non-Fortunis customers there is no check-up planned: they have to contact customer service to update or upgrade their product(s).

After the check-up the database is updated and the activity cycle continues with the customer profile and risk analysis. It is then that a customer is categorized in another segment (e.g. from Premium to Max, from Value to Value+).

The holistic level and the single key activity level as discussed above enable the BM to be viewed and explained from a different angle. Another interesting point of view is the value appropriation of selected participants throughout the activity system. Figure 10 illustrates this for the FO and its customers.
Based on our findings, we have built a BM tool (www.businessmodelsca.com) that takes into account the following specifications inter alia:

- As already indicated above, it is not intuitive for managers to start from the key activity system. However, they have understood that even building up the model from the value per customer segment automatically results in the activity system. The tool therefore facilitates the addition of BM elements to any of four containers, i.e. participant, key resource, key activity and value. As soon as the user has added some elements, he can move on to the design of the BM, where he can add and link elements on the level of a single key activity (as in Figure 5, for example).

- The (interaction between) visual and textual representations of the BM reinforce the consistency and insights on both the holistic and single activity level. The tool includes one textbox per key activity to explain the essence of the visualization. Once the design has

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**Figure 10**: Value appropriation in the Finax BM (FO and customers only)
reached a first draft, the user can draw reports based on several filters, as illustrated in our cases. Additional figures can be imported (as we did for the holistic level in Figure 4 and Figure 8).

- From several user tests we have observed that distinguishing between value and key resource is experienced as difficult in some cases. For instance, in the case of HTV, the user might wonder if the target audience represents value rather than a resource from the customer’s point of view (sponsors and advertisers). The answer is clear-cut: the target audience is a key resource built up in the key activity system. It belongs to the FO and the main value extracted by the customer is the effectiveness of the reach (the right message to the right person at the right time and place). This value is created for the customer during the distribution of the content, a key activity that is the result of a combination of key resources. However, the audience is accumulated in the medium term as a consequence of value created for participants in the key activity of gynaecologist recruitment.

- An in-depth understanding of a company’s BM is preparation for the evaluation of the BM. In the tool, any element of the BM design can be evaluated in terms of strengths and weaknesses. The external environment is included the tool since any opportunity or threat can be linked to elements in the BM (e.g. a key supplier will become a direct competitor: the attribute of ‘threat’ with a short description is added to this participant; or the network of gynaecologists in Figure 5 is an accumulated key resource hiding an opportunity). In the reports module, a SWOT matrix is automatically generated and serves as input to determine the strategic options to be considered (clarified in a textbox).

- Finally, the user can investigate the impact of a strategic option on the current business model. A re-design of the BM can start from the initial model or from any next scenario that has been elaborated. All design and report options are available for each scenario.

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1 Besides the availability of all of the main business intelligence through the HTV CRM database and all other digital data files, there is also the author’s accumulated knowledge and competency from the intensive managerial function during almost four years. This permits in-depth investigation of the case and serves the research purpose.

2 Besides HTV, the ten SMEs are situated in the following sectors: software developer, insurance and investment advisor, healthcare service provider, baker with own production and ten shops, laboratory equipment wholesaler, furniture manufacturer and wholesaler, ports producer and installer, in-lab calibration of instruments, biodynamic agriculture with own retail channels, production of cladding for houses.


4 The nodes for coding are the nine BMC building blocks in protocol I and the components of Figure 2 in protocol II.


8 Since further research has shown that our BM framework and tool are applicable for companies as well as for social and not-for-profit organizations, we use the term focal organization (FO) instead of focal firm.


11 Reportage is sponsored especially when the topic is related to prescription-based medication. Publicity is strictly forbidden for this market segment in Belgium: brand names cannot be mentioned, even company names are usually not visible in reportage (although it is allowed, companies avoid it). Moreover, in such reportage, all alternative, officially recognized therapies must at least be mentioned so that patients have an objective overview. In other words, the HTV business model explains the extent to which the effective reach (efficiency driver) is achieved for this important customer sub-segment.