

CULTURAL DIMENSIONS IMPACT ON DEVELOPING ACTIVE CUSTOMERS

Oana LUPAN
Electrica S.A. – Romania
oana.lupan@electrica.ro

Ioan ROSCA
Electrica S.A. – Romania
ioan.rosca@electrica.ro

Dumitru FEDERENCIUC
Electrica S.A. – Romania
dumitru.federenciuc@electrica.ro

Dan APETREI
Elsaco – Romania
dan.apetrei@elsaco.com

ABSTRACT

We developed a theoretical approach meant to analyze the national culture influence over increasing the rate of customer engagement in Smart Grid/Smart Metering initiatives. Using Geert Hofstede's cultural dimensions rates specific for national cultures we identify active customer development potential. We also highlighted the cultural barriers in active customer implementing process and we suggested methods to overcome these barriers. Finally the purpose of the paper is to help in adapting the regulatory policy to the cultural matters in order to enhance customers' engagement.

THE ACTIVE CONSUMER

Active consumer vs passive consumer

Passive customer only uses electricity. He simply plugs in his devices, gets a bill and pays it, without making any effort to inform himself, to understand the complexity of the electric power system, his role in it and how he can benefit from using it while letting the system benefit too. He doesn't react to incentives. He is uninformed and unadapt. In contrast, the active electricity consumer is sensitive to incentives and informations received from the network. Moreover he monitors used household devices status, their operating conditions, he seeks informations regarding energy price in different periods and its trends and he optimize those informations by planning household equipment according to them. So the active customer is paying attention and reacts to stimulus, he informs himself and he constantly adapts.

The recent tendencies in electric power systems evolution due to the growing importance of renewables in electricity production (which impose the transition from flat tariffs or intraday tariffs to real time tariffs) ask more than an active customer. They ask for a consumer who gives informations about his electric power consume needs to the system (forecasts). It is an advanced type of active customer – let name it „pro-active customer”.

Active customer characteristics

Our considerations on active and passive customers allow us to identify certain individual characteristic that make possible the transition from passive consumer behavior to active consumer behavior, as follows:

- open to new,
- curious,
- well informed,
- able of change acceptance,
- able of discomfort tolerance,
- able to make decision quickly,
- organized,
- thrifty with the resources,
- responsible to the community,
- concerned about the environment
- concerned about future generations,
- available to share informations about himself,
- above-average level of education.

Excepting the last one, all the mentioned characteristics are influenced by the individual's values, so they are determined by cultural features, as we will see next.

So the active customer is capable of reducing his energy costs, he sustain renewable resources in energy production contributing to environment protection and he contributes to power transport and power supply networks frazzle reduction by helping in maintaining a balanced network load and thus diminishing maintenance costs. His mobiles are: the concern for making economies (savings), environment care and social responsibility. Those benefits and mobiles are perceived differently depending on consumer cultural determinations, unexpected transformation of the customer behavior in the most varied ways being possible.

Barriers in adopting active or pro-active customer behavior are: initial costs (due to the necessity of buying specific equipment: smart meter, home energy management system, home appliances with smart components, etc.), time used for getting informations (for keeping informed), discomfort due to routines change for adapting electric power consume behavior to tariffs trends, but those barriers are also perceived differently in different cultures. Also a barrier, with an evident cultural character, as will be seen in our analysis, is “the privacy issue”.

CULTURE

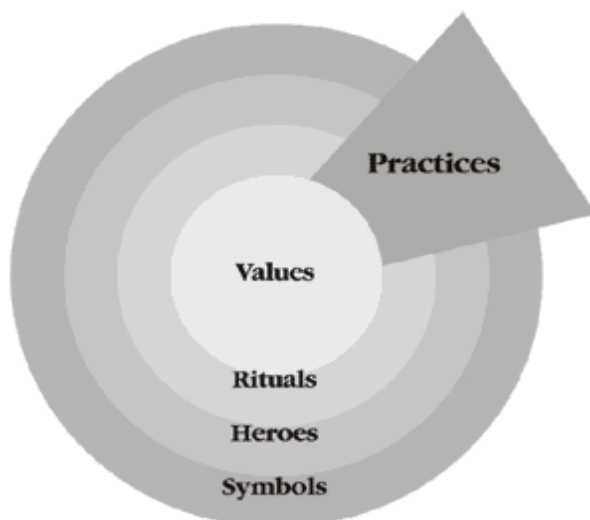
Culture as software of the mind

For being able to start our analysis we should clarify the meaning of “culture”. The concept of “culture” was first defined in an anthropological regard by E. F. Taylor (1871), as “complex assembly of knowledge, religious beliefs, art, moral, customs and all other

capacities and habits a man acquires as member of society” [1]. Afterwards, this concept generated a very large number of definitions and approaches, all of these reiterating the idea of culture capacity to shape human behavior and thinking, to influence all human activities.

Of all this approaches we selected Geert Hofstede’s who sees culture as “software of the mind”. Mind software means “probable and understood reactions in known history conditions” [2]. The mind software sourced in the social environment the individual evolved/evolve in. “A useful term for such a mind software is culture” says Hofstede [2]. This is always a collective phenomenon and distinguishes groups or communities from one another. Because of that cultural induced mind software, the individuals cannot transcend cultural determined borders in their vision of the world. And even if there are some individuals capable of doing it, when it comes to large groups (as nations are) the change is very difficult.

In order to understand this phenomenon, we need to take into consideration the manifest elements of what we call “culture”. Of countless terms used in describing manifestation of culture, the next four capture almost entirely the concept of “culture”: symbols, heroes, rituals and values. These manifestations show as “onion skins” [2], symbols being the most superficial, followed by heroes, rituals and then values – the most profound manifestations of culture.



In “onion skins” diagram symbols, heroes and rituals are the superficial, the visible skins often called “practices”. Values are practically the core, the essence of culture, expressed as preference for certain situations or acts over other and manifesting as antithetic feelings. They are among the first things children learn implicit and unconscious, most of them remaining at an unconscious level during life, impossible to be detected directly, but determining individual’s behavior in

different situations.

National culture dimensions

Geert Hofstede found out values that mark the difference between national cultures can statistically be grouped in four continuums, defining the national culture dimensions:

- **Power Distance (PDI)** - the dimension expresses “the degree to which the less powerful members of a society accept and expect that power is distributed unequally”, “how a society handles inequalities among people” [3]. In high PDI rate societies peoples accept a hierarchical order with no further justification. In power distance low rate societies, their efforts are meant to ensure an equal distribution of power, and disparities need justification.
- **Individualism versus Collectivism (IDV)** – „A society’s position on this dimension is reflected in whether people’s self-image is defined in terms of “I” or “we”” [3]. High rates for this dimension (meaning individualism) mark the preference for a loosely-knit social framework, for individual autonomy, for self-accomplishment. Low rates, expressing collectivism, manifests through preference for a tightly-knit framework society where the groups, the collectivities and the loyalty to them are very important.
- **Masculine versus Feminine (MAS)** – this dimension has masculinity, expressed as preference for achievement, heroism, assertiveness, competition and material rewards for success, on one side and femininity, that stands for cooperation, modesty, caring for the weak and quality of life, on the other side. Masculine societies at large are more competitive. Feminine societies at large are more consensus oriented.
- **Uncertainty Avoidance (UAI)** rate expresses „the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. The fundamental issue here is how a society deals with the fact that the future can never be known: should we try to control the future or just let it happen?” [3]. Strong uncertainty avoidance manifests socially through rigid codes of belief and behavior, intolerance for breach of thinking and acting rules, for unorthodox behavior and ideas. In weak UAI societies we find a more relaxed attitude, practice being more important than principles.
- **Long term versus short term orientation (LTO)** - the fifth dimension added in 1991 based on Michael Bond international research results. Long-term orientated (pragmatic) cultures prove great ability to adapt tradition to new conditions; propensity to save and invest, self-discipline and perseverance for

achieve tangible results. Short – term oriented (normative) cultures manifest intense concern for determining the Absolut Truth, restrained ways of thinking, strong rules and strong traditionalism, poor orientation towards saving for the future, focus on getting immediate results.

- **Indulgence versus restraint (IND)** - the sixth dimension added based on “worldwide value monitoring” research study for 93 countries (Michael Minkov). „Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms” [3].

CULTURAL DIMENSIONS INFLUENCE OVER CONSUMER BEHAVIOUR

Starting from the defining elements of “active customer” concept we identify, by a theoretical approach, the way each cultural dimension, based on its characteristics or effects, as described by Geert Hofstede, influence customer engagement with Smart Grid and thus the development of what we consider “active consumer”.

Power distance and customer engagement

In high power distance rate societies (as: Russia, Poland, Czech Republic, Slovakia, Slovenia, Croatia, Serbia, Romania, Bulgaria, Turkey, Greece, Albania, South of Italy, Malta, Portugal, Spain, France is Belgium, according Hofstede Center Cultural Survey) [4] some specific behaviors for active consumer (for example : smart meters and home energy management systems installing, changing gas or electric power consume habits) could be imposed to people by power holders/decision makers through a series of rules and regulations, population showing a fast and silent compliance. There will be no need for awareness and stimulating campaigns, but informing campaigns regarding the new rules and regulations will be useful. There will be no mass reactions even if certain costs will be transferred to consumers, but this should be also regulated. So, at acceptance level a high PDI helps, but it has a bad influence on customer engagement. The tendency to accept power authority (and the regulator or he invoice issuer have such authority) will determine a low appetite of people for managing their own consume. Imposed and un-assumed behaviors bring small results compared to assumed behaviors. Under these circumstances, the regulator has to ensure first of all a normative framework for implementing devices/systems that can adapt power consumption to power production and balance the network load automatically, without requiring any customer action.

In low power distance rates societies (Estonia, Leetonia, Latvia, Sweden, Norway, Denmark, Finland, Iceland, Ireland, UK, Luxembourg, Germany, Switzerland, North of Italy, Austria, Hungary) [4] practically nothing can be imposed. That is why awareness campaigns regarding the benefits of customer engagement and of active consumer behavior are crucial and public debates on necessary rules and regulations are needed. In fact here the role of the regulator will be more one of mediator in the public debate, and the energy provider has to become a teacher, a coach, helping the client to develop its skills in managing consumption and costs. An important issue will be the costs for implementing smart metering. Low PDI society’s members are not willing to bear these costs entirely. A solution is an equitable sharing of costs between all the players in the energy system, after a rule resulted also from a public debate.

Active consumer and individualism

In societies with high individualism scores (Estonia, Leetonia, Latvia, Sweden, Norway, Denmark, Finland, Iceland, Ireland, UK, Malta, Belgium, Luxembourg, France, Italy, Switzerland, Germany, Poland, Czech Republic, Hungary) [4] and even in those with medium high scores (Spain, Austria, Slovakia) [4] the main mobiles in adopting active consumer behavior are the concern regarding personal budget management and the material benefits obtained. In this context, use of Demand Response Programs (DRP) will show the best results. Promoting campaigns for those programs have to insist on the lower costs obtained by the consumer with these programs and on the bonuses granted if there are some. The problem here will be the strong resistance in bearing any costs related with the necessary technology implementation (as smart metering), resistance that can be annihilated only by demonstrating a favorable ratio between the material benefits obtained and the supported costs.

Strong individualism cultures are also the ones where the need to protect privacy becomes a barrier in adopting active consumer behavior. It is easy to see that polemics regarding intimacy violation occurred and developed mostly in countries with high individualism rates (89 – 91) as USA, UK and Holland. This barrier could be removed using programs and campaigns meant to increase trust in data protection systems, to show how data are aggregated and used and also campaigns meant to demonstrate energy consumption data represent nothing compared to informations that individuals are unconscious publicly displaying by using different devices in day to day life (smartphones, smart TVs, tablets, etc.).

On the contrary, in collectivist societies (Portugal, Albania, Greece, Turkey, Bulgaria, Romania, Serbia, Slovenia, Croatia) [4] customer engagement is easily

obtained and sustained. People manifest availability to adopt active consumer behavior and even to support technology implementation costs if aware of the benefits on environment and on community's quality of life. In collectivist cultures the individual feels responsible for the others, for the next generations, so these two can be used as themes for increasing customer engagement campaigns. Community's members' disposition to respect community's norms and rules, specific for collectivist cultures, should also be used by the regulators. It will be easy for them to implement policies meant to transform passive consumer into active consumer especially if community benefits will be used as argument to sustain those policies.

This dimension impact has to be considered in conjunction with long term/low term orientation. The mobile for customer engagement grow in individualist cultures is enhanced by short term orientation and diminished by long term orientation, as well as active consumer's development potential is increased by long term orientation.

Masculine vs feminine cultures and active consumer

Comparing what characterize the active consumer and what characterize the individuals from masculine cultures (as: Greece, Albania, Slovakia, Check Republic, Poland, Hungary, Austria, Germany, Switzerland, Italy, Belgium, UK, Ireland) [4] we will see most of those features overlap. So, if managed correctly, the masculine character of a culture represents a catalyzer for active consumer development. But the material advantages should be strongly promoted. And there is also a condition: the household savings value obtained by adopting an active consumer behavior should be bigger than the supported costs, so that the individuals perceive an income. Because competition, achievement, assertiveness and material rewards for success are key elements for masculine cultures, using programs that simulate competition ("the most efficient consumer", „the best informed customer") destined to children and students will create a new generation of active consumers. As for the adults it's enough to provide the necessary informations, to enhance the obtained advantages compared to other customers and they turn into active consumers. What is very important in this case is customer segmentation and the way data are presented – aggregated, statistic, without any identity references – because masculine society's members have a strong sense of privacy. That could lead to a lower customer engagement if possibility of private life exposure is perceived.

Because active consumer behavior really improves the environment and the life of the community, even indirectly (through reducing the necessary power production capacities and also the pollution, through

balancing and reducing networks load, minimizing maintenance costs and prolonging the networks functioning) feminine cultures (as Russia, Romania, Bulgaria, Turkey, Serbia, Slovenia, Croatia, Estonia, Leetonia, Latvia, Finland, Denmark, Sweden, Norway, Iceland, France, Spain, Portugal, Malta) [4] will sustain customer engagement grow. But the necessity of adapting the consumption routines to tariff trends, which affects the "quality of life", essential value in feminine societies, can become a barrier – "the discomfort barrier". Active consumer behavior promoting efforts should concentrate on environment protection, community well fair and social responsibility awareness campaigns, those core values for feminine cultures being the suitable instrument to overcome "the discomfort barrier". Even so, in highly feminine culture social responsibility will be the one generating another barrier – the problem of vulnerable consumers' capacity to adapt and benefit from the programs designed for active consumers. This problem could be solved with efficient social protection programs for vulnerable consumers, the entire community showing availability to support these programs.

Uncertainty Avoidance and its impact

Taking into consideration that cultures with strong uncertainty avoidance (as: Albania, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Switzerland, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Leetonia, Luxembourg, Malta, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Spain, Turkey, Hungary according Hofstede Centre New Cultural Survey) [4] manifest a powerful orientation towards procedures, behavior and events control mechanisms, and also towards forecasting and predictions, we consider active consumer pattern will be successful. Adopting the specific behaviors will be facile, natural and thus rapid, requiring only simple customer information regarding smart metering technology and what it can do. Even the technology related costs can be transferred to customers, being accepted because of its perceived advantage: the opportunity to forecast and control energy consumption and costs. But the rate of turning passive consumer into active ones and the speed of this phenomenon depend on the intensity of uncertainty avoidance specific for a certain society (are bigger and quicker if uncertainty avoidance scores 100 and lower and slower for UAI 59) and also on how other cultural dimensions manifests.

There are countries at European level with medium uncertainty avoidance (Iceland, Norway, Slovakia) [4] where this cultural dimension has a very small impact on active consumer behavior development and also some countries with low uncertainty avoidance (Denmark, Sweden, Ireland, UK) [4] determining a

weak appetite for changing behavior that can be however annihilated by pressing hard on their specific individualism. For the last two mentioned regulators can also sustain their efforts with specific argument for masculine cultures, while for the first two, the feminine character of their cultures asks for argumentations based on environment and community benefits.

Long term orientation vs short term orientation and customer engagement

Because long-term orientated – pragmatic – cultures (Austria, Albania, Bulgaria, Belgium, Czech Republic, Croatia, Estonia, France, Germany, Hungary, Italy, Latvia, Lithuania, Luxembourg, Romania, Russia, Serbia, Slovakia, Sweden, Switzerland, UK) [4] manifest an unbelievable ability to adapt tradition to new conditions along with self-discipline and propensity to save and invest, it is obvious that here customer engagement growing and active consumer behavior development will be encouraged. The characteristic perseverance for achieving tangible results will sustain also the behavior change, all those involved – regulators, transport and distribution operators, suppliers, other organizations – will dedicate themselves in this process, ensuring its success.

Short – term oriented – normative – societies (Turkey, Greece, Slovenia, Poland, Norway, Denmark, Finland, Iceland, Ireland, Spain, Portugal, Malta) [4] prove an intense concern for determining the Absolut Truth, restrained ways of thinking, strong rules and strong traditionalism, poor orientation towards saving for the future, focus on getting immediate results. Their strong traditionalism and the poor orientation towards saving will determine resistance to behavior change and to active customers' development. But this resistance could be diminished by exploiting the specific “focus on getting immediate results” manifested in such cultures, using special conceived DRPs (for example: DRP with a module that inform the customer daily, by sms or e-mail, regarding the household savings or other benefits obtained).

Indulgence versus restraint influence over customer behavior

A society with high level of indulgence (as Austria, Belgium, Denmark, Switzerland, Finland, Iceland, Ireland, Luxembourg, Malta, Norway, Sweden, UK) [4] show low control over its members, so the acceptance or the rejection of any new behavior depends on other cultural dimensions levels, the development of active consumer behavior being in this case only indirectly influenced by this dimension.

As for the restraint oriented cultures (Albania, Bulgaria, Czech Republic, Croatia, Estonia, France, Germany, Italy, Latvia, Leetonia, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Turkey, Hungary) [4], the strong control over the individuals and over their ways of satisfying their needs could transform active consumer behavior into social norm, if a long term policy, based on strict rules regarding customer obligations and on penalties for all breakings, is carried out.

CONCLUSIONS

Our analysis conclusions are presented along with suggestion for effective policies and support schemes needed in active customer development effort in European countries, taking into consideration cultural differences.

We also extracted and presented guidelines and approaches for strategies meant to promote the “active customer” concept, to educate customers in order to increase their engagement with smart grid and for elaborating specific energy sector regulations and policies in each country, depending on their characteristic cultural dimensions rates.

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