

Telco and Utility: Friend or Foe?

How telecommunication companies and utilities fight to capture a share in smart energy



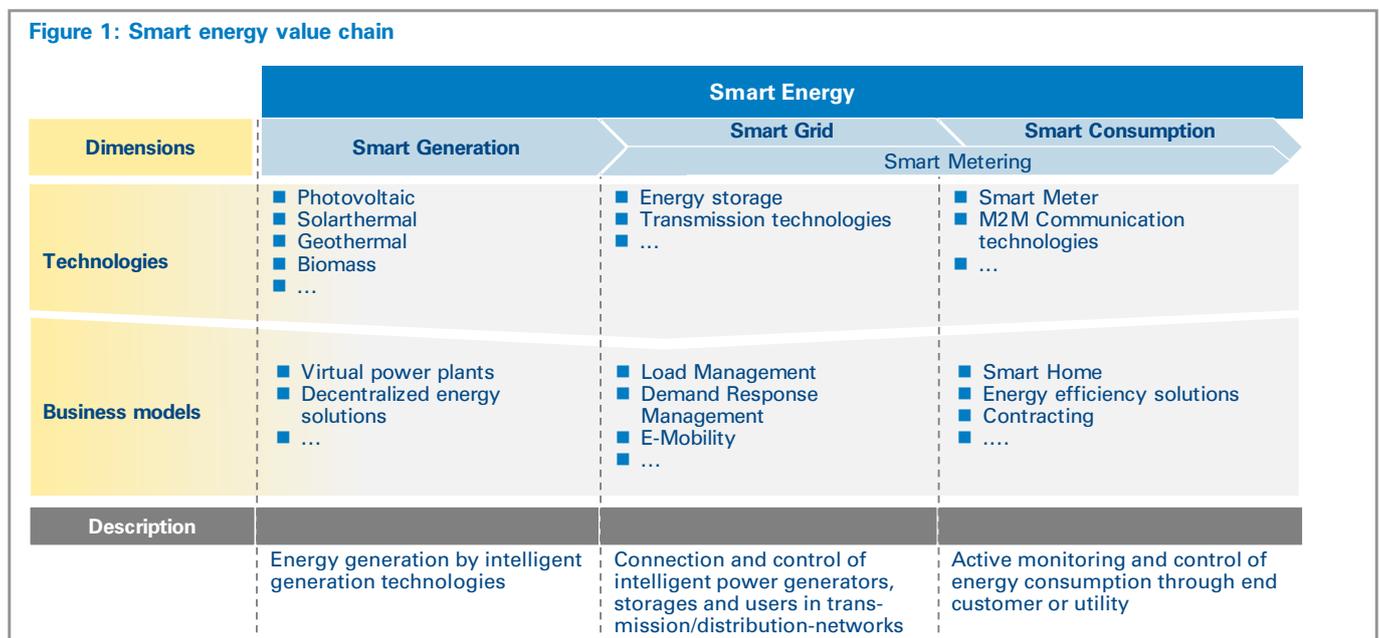
The energy market is undergoing a tremendous transformation. All parts of the electricity value chain are on their way to becoming “smart”. This creates new market opportunities – and players are evolving to take advantage of them. Telecommunications companies (telcos) consider this an excellent opportunity to diversify their own product and service portfolio into “smart” energy. This poses a potential threat to utilities companies, who need to reconsider their traditional business models and defend their established position against these new market entrants, and avoid becoming mere electricity producers in a market with higher value opportunities. How can utilities respond? Should they protect their electricity value chain against telcos, or should they pursue a certain degree of cooperation and collaboration, or should they ignore? In order to stay competitive on the future energy market, utilities need to carefully assess their strategic options and decide which path to follow.

Telcos going “smart”

The world is becoming smart – smart cities, eMobility, smart grids and smart homes are calling for a new era of energy-related technologies and systems. Leveraging their existing capabilities, telcos consider this technological evolution as an opportunity to enter new business segments. They claim the linkage between information and communication technologies

and electricity grids as one of their key growth sectors of the future in order to overcome the shrinking margins in their classical, communication driven business models.

Many telcos have already initiated “smart energy” pilot-projects – and some are even in the process of rolling out their first energy related service offerings. (Figure 1)



Deutsche Telekom, for example, is investing heavily in order to play a major role in the future utilities market (see case study overleaf).

As the market for “smart utilities” is quickly gaining momentum, identifying key emerging players and anticipating future market trends will be essential for incumbent utilities to stay competitive.

Utilities’ market of the future – telcos as “Partner” or “Competitor”

Utilities and telcos are approaching the “smart energy” sector from two different angles, as shown in Figure 2. Both have begun in familiar areas of core competence. In order to understand the electricity market evolution, it is vital to understand the ongoing expansion steps of both, utilities and telcos.

Telcos have approached from a domestic consumer angle, and have begun to play in home automation and smart metering. Utilities have approached from the need to ensure grid stability in light of increasingly diverse and decentralized sources of energy generation such as wind farms. They are primarily investing in smart grid and smart metering as a means of load and balancing management.

The “smart grid” domain merges the telcos’ field of modern communication technology with the utilities’ field of grid operation. It leads to a new, shared market containing two radically different types of company. Telcos and utilities must decide whether to compete in this domain or to collaborate. At Arthur D. Little, we see two potential future scenarios emerging: partner or competitor. Both must be understood to develop effective strategies for the future.

“Partner” or “Competitor: two scenarios for the future competitive landscape

“Partner” scenario: Utilities and telcos combine their core competencies

In the “Partner” scenario, telcos act as enabler and offer their own core competencies as service provider to utility companies.

In this scenario:

- The utility company delegates multiple processes to the telcos without losing control of the customer
- The telco takes over responsibility for:
 - Meter installation and maintenance
 - Data collection at the gateway and data transport
 - Data processing
- However, utilities remain in charge of the most value adding process steps such as meter control and load management as well as customer access

Following a partnering approach with telcos, a utility could benefit from a range of opportunities:

- Leverage the joint customer base and sales channels
- Sharing investments in smart grid technologies (e.g. smart home platform)
- Saving cost by using telcos’ customer and technical services (e.g. a call center)

However this strategy comes with several risks:

- Telcos could increase their utilities know-how, offering full range utilities services. At a later stage utilities might be locked-in with proprietary technology if interoperability not given
- Telcos might be or become too expensive or not enough flexible regarding new technologies

Figure 2: Activities of utilities and telcos

Smart Grid / Smart Home				Examples
Telcos	Metering & Monitoring	Smart Grid	Utilities	
Deutsche Telekom	<ul style="list-style-type: none"> ■ HomeNetwork 2.0 	<ul style="list-style-type: none"> ■ Pilot Duisburg ■ Pilot Emden 	<ul style="list-style-type: none"> ■ Cooperation with ABB ■ Mini CHP+ Virtual Power P. 	
Telefonica	<ul style="list-style-type: none"> ■ Gateways, sensors, etc. 	<ul style="list-style-type: none"> ■ Electricity meters 	<ul style="list-style-type: none"> ■ BeyWatch 	
vodafone	<ul style="list-style-type: none"> ■ Smart metering connectivity solution 	<ul style="list-style-type: none"> ■ Cooperation British Gas ■ Cooperation with AMS 		
	<ul style="list-style-type: none"> ■ SmartHome ■ Hardware 	<ul style="list-style-type: none"> ■ Pilot Mülheim ■ Smart Meter EDL40 	<ul style="list-style-type: none"> ■ Virtual Power Plant ■ Smart-Grid Consortia 	RWE The energy to lead
	<ul style="list-style-type: none"> ■ E.ON EnergieNavi 	<ul style="list-style-type: none"> ■ Competence Center E.ON Metering 	<ul style="list-style-type: none"> ■ Pilot Harz ■ Harz.EE Mobility 	e-on
		<ul style="list-style-type: none"> ■ Yello Smart Meter 	<ul style="list-style-type: none"> ■ Meregio ■ CC Smart Grid 	EnBW

Source: Arthur D. Little Analysis

Case study: Deutsche Telekom AG

Deutsche Telekom AG, Germany's market leading telco, is a very active player in different energy related activities in Europe, both domestically and overseas. Deutsche Telekom recently announced to engage in decentralized power generation products together with engine manufacturer "Motoren AT". Together they are offering a full package for Micro-Combined Heat & Power Plants (CHP), from installation to maintenance and remote control, targeted at municipal utilities.

But that appears to be just the beginning. The company continues to develop ambitious plans for the future in smart home solutions such as a home management platform which enables technologies and devices (including windows, lighting, shutters/blinds, alarm systems, and home appliances), to be easily controlled remotely with a smartphone or tablet.

Further activities

Deutsche Telekom AG entered the market with a modular smart metering service for homes comprising:

1. **Installation and maintenance**
The technical service is responsible for the installation, maintenance and replacement of meters
2. **Operation of meters and data handling**
Continuous reading and data-transfer is handled by the Deutsche Telekom AG
3. **Additional services**
Provision of additional services such as data evaluation, data storage and customer portals

Additionally, Deutsche Telekom AG has initiated pilot projects for other energy related topics such as:

- Smart home solutions (B2C)
(pilot project T-city Friedrichshafen)
- Smart energy solutions (B2B)
(pilot project Tengelmann energy)

Partnering with a telco might bring short to mid-term benefits but could in the long run endanger the utilities' position. In a fully unbundled electricity market with a growing share of decentral power generation, a regulatory environment favoring smart grids and smart energy minded customers a dependency on a telco must be very carefully evaluated.

"Competitor" scenario: Telcos enter the consumer end of the market alone

In the "competitor" scenario, telcos compete with utilities to offer smart metering, sales and energy management services direct to consumers. Vice versa, the utility must develop smart grid offerings on its own and with other partners, e.g. specialist

telecommunications technology providers. For a telco, this implicates to build own value adding steps such as meter control and load management, as well as customer access. If a utility will offer a full utility service, it has to purchase electricity and gas, which means own power procurement and trading capabilities.

For utilities and telcos the competitive approach might have multiple opportunities:

- Both can fully exploit their end-customer potential without risking conflicts, e.g. by cross-selling services
- Higher flexibility to change direction in a still developing regulatory environment
- Ability to "pick the best" when cooperating selectively with a range of – potentially smaller – partners

The risks from this strategy are obvious

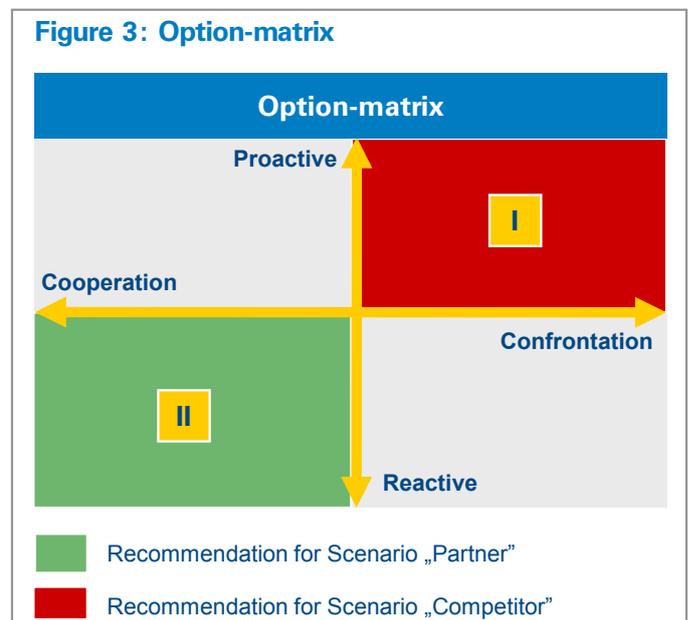
- On both sides significantly higher investments in technologies and skills are necessary
- The risk of stranded investments is high since the market for smart grid services is in its infancy and technologies are at many levels not yet standardized

Strategic options for utilities

Considering the given scenarios, utilities need to prepare carefully for the future market environment and emerging players. They are urged to monitor the current developments closely, explore strategic options and derive an appropriate strategy.

Arthur D. Little envisages a set of strategic options in the context of the market dynamics which have to be evaluated by utilities and telcos when planning their smart energy approach (Figure 3). Besides the question of cooperation vs. competition there is the timing question to be answered - shall we move fast

Figure 3: Option-matrix



and proactive, or are we rather a late follower being reactive to market developments?

Utilities need to evaluate five fundamental questions which define the best strategic option given the specific company situation

1. Are own capabilities and important factors such as brand position strong enough to develop and market own product offerings?
2. How do the strategic options link to and influence the overall company strategy?
3. Which partnerships seem most feasible, how can they be accessed and what are the mutual benefits of both parties involved?
4. Which risks are associated with the different strategic options?
5. How does a long term and scenario based business case look like?

Utilities need to prepare

Significant changes transform the electricity value chain. This poses not only opportunities but also risks to incumbent utility companies. Without taking appropriate measures in time, they face the risk of losing market share to new emerging players.

In order to derive at a clear smart meter / smart grid strategy the following five basic steps need to be taken by utilities:

- Assess internal capabilities and competencies
- Derive at a set of strategic options based on the overall corporate strategy
- Select a strategic option and evaluate potential partnerships
- Develop promising business models
- Adapt the organization towards the new business models

The derived strategy needs to provide also an answer to the question of partnering with telcos. This challenge is particularly difficult since the structure of the electricity market is becoming more and more complex. Utilities need to choose their strategy wisely as it will pave the way into the electricity market of the future.

At Arthur D. Little we have helped major clients faced with the evolving challenges by:

- developing a sound and solid smart energy strategy
- defining comprehensive partnership evaluation models
- supporting the translation of ideas and concepts into sustainable business models
- integrating smart meter/smart grid activities into the organization

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Arthur D. Little

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