The Rise and Fall of Independent Electricity Retailers in Germany

Ulli König
RWE AG
Corporate Marketing
Marketing Planning and Research
Opernplatz 1
45128 Essen/Germany

Phone: +49-(0) 201-12-15629
Fax: +49-(0) 201-12-15628
eMail: Ulli.Koenig@rwe.com

Abstract

In the beginning of the liberalization of the German electricity market a great number of new, independent electricity retailer entered the market with mostly very competitive prices. Everybody expected a highly dynamic market with high switching rates and the price as the number one switching criteria. Even the big players started to lower their consumer prices, launched marketing campaigns and branded their products. The result of this price-driven competition was the loss of earnings for all companies, low switching rates, and most of the new retailers were forced to sell their customers or close their business. The reasons for this disaster are misperception of the market structure and too optimistic expectations of customer reactions and wishes. This paper deals with these misperceptions, the differences between the estimated and the real market behaviour.

Key Words

Energy, Electricity, Market-Dynamics, Misperception, Liberalization,

Structure of the German Electricity Market

Due to the long history of regulation, the German Electricity Market has a very organized structure. A small number of major electricity producers dominate the market. But most customers bought and still buy their electricity from local utilities (*Stadtwerke*[i]). These utilities have long or medium term delivery contracts with the major electricity producers mentioned above. Even though the market for industrial customers has been liberalized before the market for small businesses and household customers, this was no possibility to learn the right way to deal within a totally liberalized electricity market. There is still an amount of regulation left in the market for household and small business customers, as every

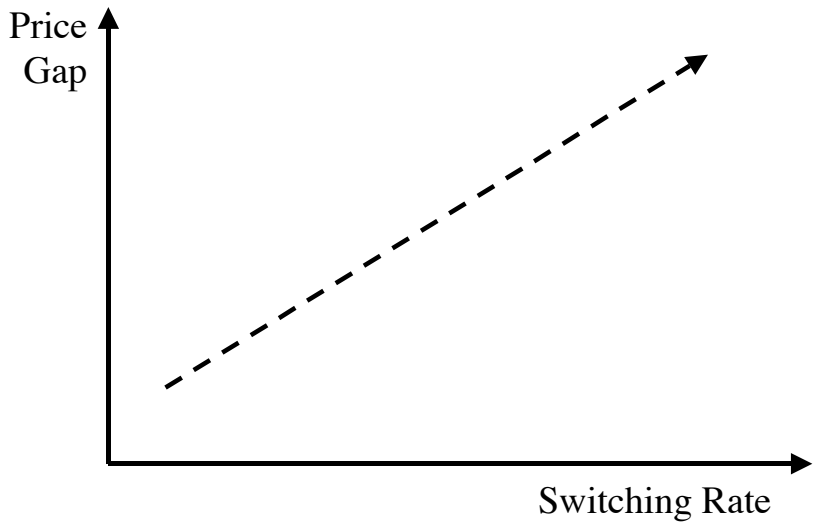
retailer has to offer a so called *Allgemeiner Tarif* – a price that is set by governmental regulators of the specific *Länder* – and none of the customers can be forced to switch form *Allgemeiner Tarif* to a so called *Sondervertrag*, a contract without major governmental regulation.[ii] In this paper we will concentrate on the household and SMB-Market and discuss the problems with industrial customers only at a very abstract level.

A few important points:

1. The German electricity market has a long history of regulation.
2. The market for household and small business customers is strongly influenced by the existence of the *Allgemeiner Tarif.*
3. Most household and small business customers buy their electricity form local utilities.
4. Electricity seems to be a commodity good.
5. Industrial Customers are used to cost oriented and flexible procurement.

Estimated Market Dynamics

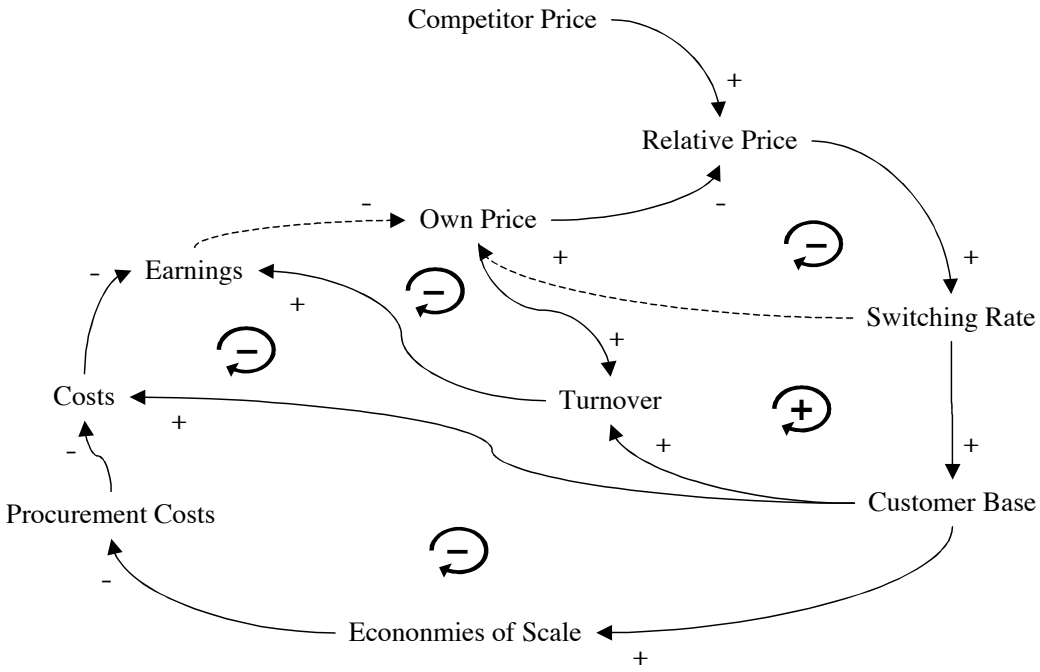
Liberalization equals a highly dynamic market, high willingness to switch the provider, price driven competition, etc. This seems to be the lesson everybody learned form the liberalization of the telecommunication and insurance market in Germany. So a great number of new, independent power retailers entered the market with penetration price strategies, a high marketing budget and (mostly) low liquidity. The (simplified) mental model of the switching rate used by these players is pictured below.



Graphic 1: Mental Model of Switching Rates

The independent electricity retailers made a bet on decreasing wholesale prices, decreasing grid access costs and high price sensitivity of the customers. An example for the mental

models they based their policies on is shown in Graphic 2. They spent a large amount of money on marketing and sales activities, like expensive commercials. On the other hand liquidity was low because of the high costs and low earnings.



Graphic 2: Mental Model of Market Structures

Real Market Dynamics

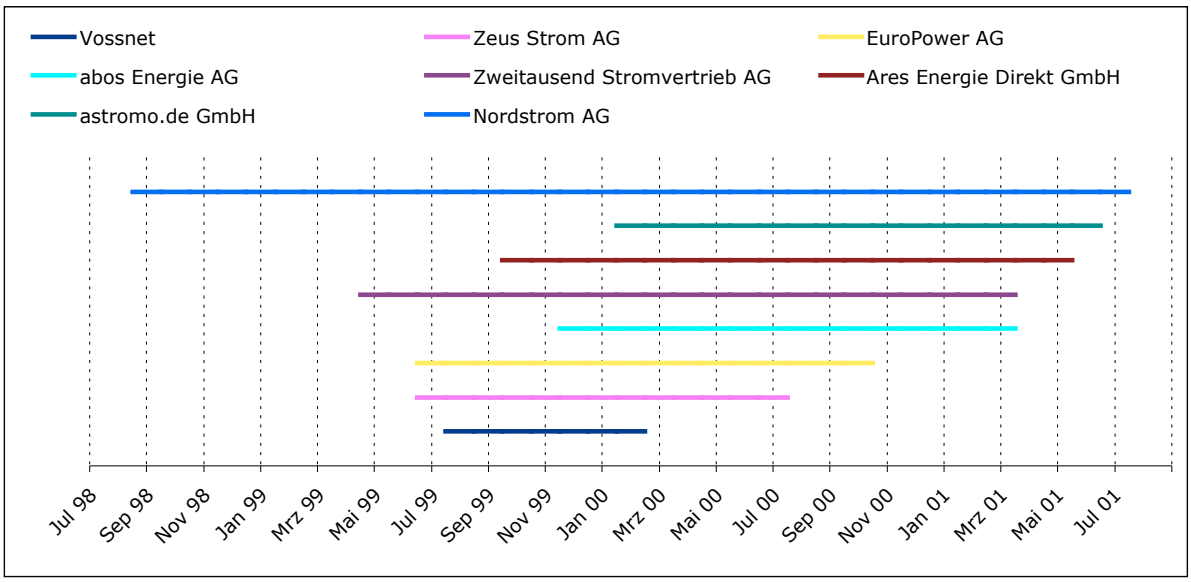
In reality nearly everything was different. The price sensitivity of the customers did nearly not exist. Bad reputation of some of the new electricity retailers did not help the rest of the market. Several of these companies broke within the first two years. Graphic 3 shows the lifespan of some of the major new retailers that broke.

The customers were not willing to leave their electricity provider just because of the price. First there was of course a kind of sluggishness within the customers, as switching means to get active, get the right forms etc. But that was not the only reason for not switching. Customers wanted and still want security. They did not trust the new companies, anxious to get cut off the grid.

Another expectation of the new players did not come true. Due to a not so high liquidity and therefore high volatility of the electricity spot market and a massive increase in fuel costsiii the wholesale price of electricity on a forward basis did not decrease as much as expected. Some power plants were decommissioned, others needed repair, so the over capacityiv

decreased, slowing down the decreasing of the wholesale price. After a long time low in the mid of 2000, the price paid by industrial customers rose about 15%.[v]

As well as the price for electricity the grid access prices[vi] did not decrease as expected. This is – according to the most press articles – the major reason for the not so dynamic electricity market.[vii] The German electricity grid is – equal to the rest of the electricity market – highly fragmented. The grid is not owned by the public but by the private companies, cities. There is no governmental regulator for the grid access, but the market players (Retailers, grid owners, major customers, etc.) agreed to a so-called *Verbändevereinbarung*.[viii] Here the criteria for price building and grid access are documented. Every grid owner has to publicise his grid access prices by law. On top of these prices one has to add various taxes, including

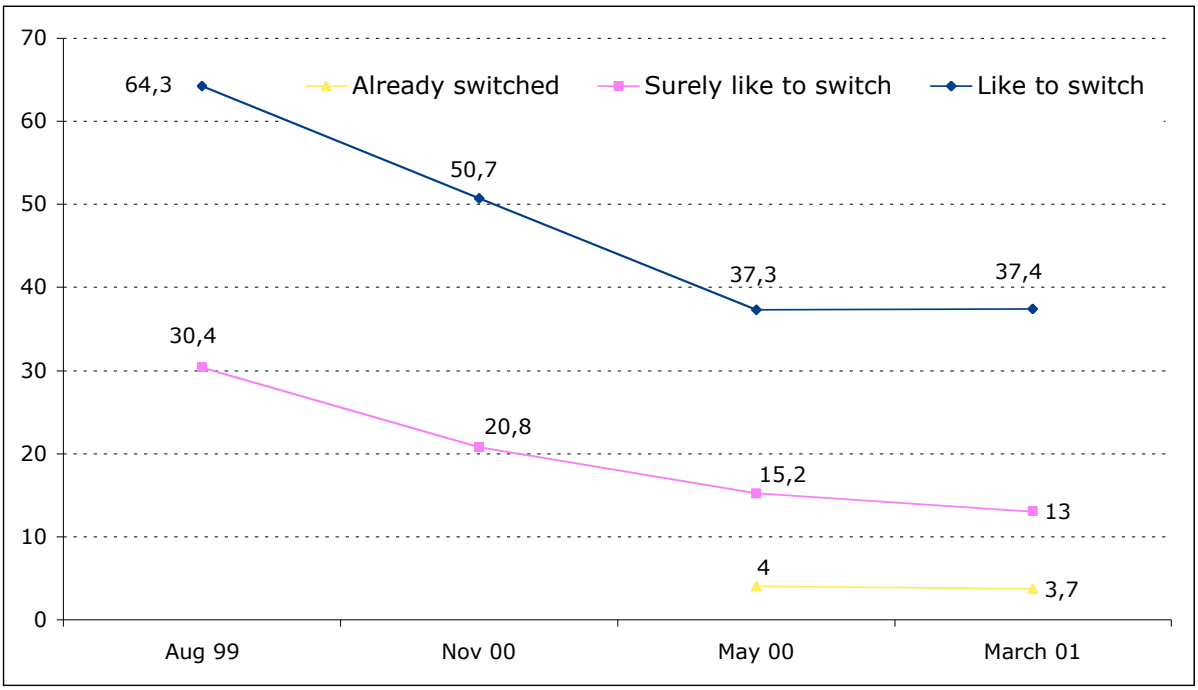


Graphic 3: Several new Electricity Retailers broke within a short period of time (avg. 19 months)[ix]

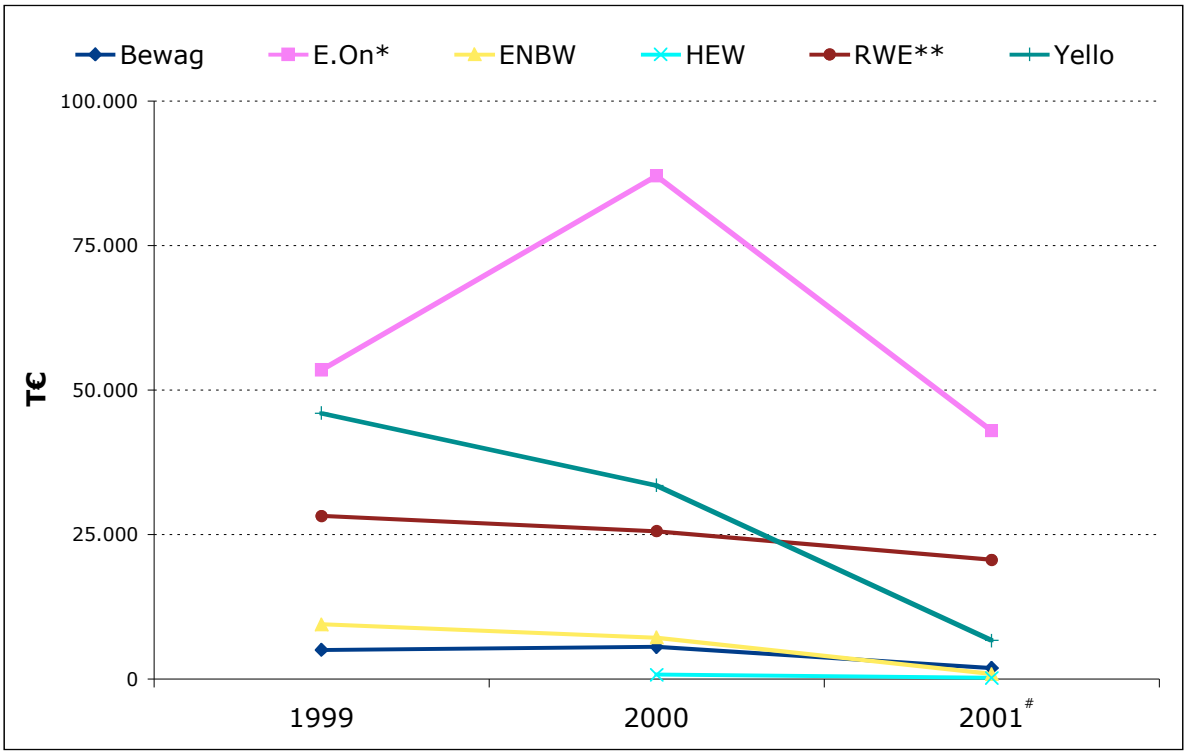
Even worse than the relative high procurement costs was, that the low switching rate did not increase. In the early days of liberalization about 64% of the household customers said, that they were willing to switch – including 30% saying they strongly like to switch. In the meantime only 37% of the household customers like to switch – including 13% who strongly like to switch.[x] But even with this high willingness only around 4% of the household customers really switched the provider.[xi] As already mentioned above, price is not everything in the electricity market for household and small business customers.

The lesson learned from this market behaviour is, that the effect of price, marketing and communication activities is not as high as in other commodity markets. It proofed, that the most effective sales activity is “direct sales”, but the earnings are to low to cover the costs. It

seems that electricity is not as much a commodity good as expected. Most major players decreased their marketing spending during the last months. Graphic 5 shows the market conduct, even though the spending for the period September to December is missing, we expect no fundamental change in behaviour.



Graphic 4: Decreasing interest in switching the electricity provider - Household customers.[xii]



Graphic 5: Development of Marketing Spending of Major Players in T [xiii]

Special Players and Niche Markets

Two market observations are of interest for this model and it's assumptions:

1. Quasi-independent players – like Yello Strom – can be quite successful. These companies are spin-offs from incumbents and try to acquire new customers outside the grid of its parent company.
2. Provider of "green electricity" can make their living if they take into account, that most customers are not willing to pay a high premium for "green electricity". They either have to find the customers who are willing to pay the premium or offer the electricity for a much lower price.

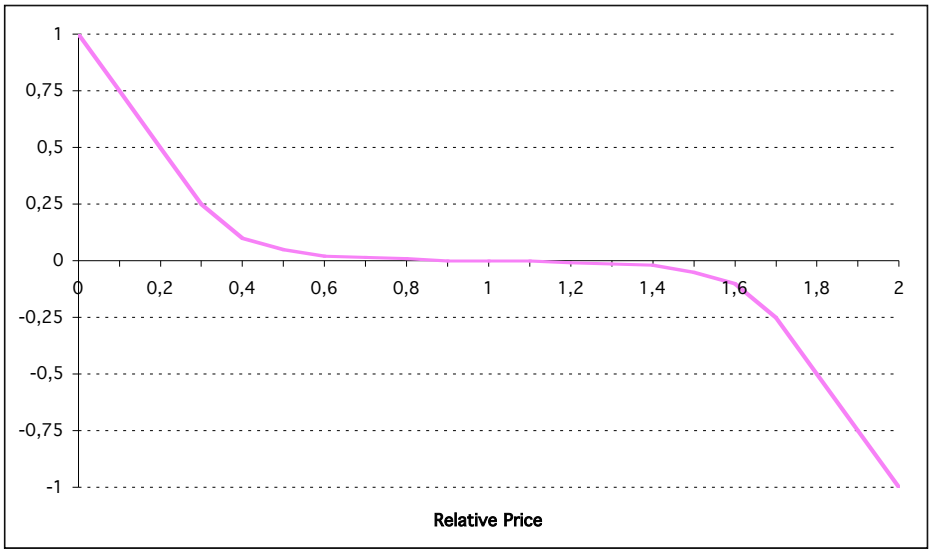
Yello Strom is a spin-off from EnBW (Energie Baden-Württemberg[xiv]) founded in August 1999. It started with a penetration price strategy and over 45 million Euros marketing spending. It is financially backed by the EnBW, that itself is backed by the EDF (Electricite de France). Yello says it has acquired over 700.00 customers since 1999. In contrast to other small players on the market, the reputation of Yello is excellent; the brand is well known and it offers competitive prices, and – ironically – is still burning money.[xv]

Simulation Model

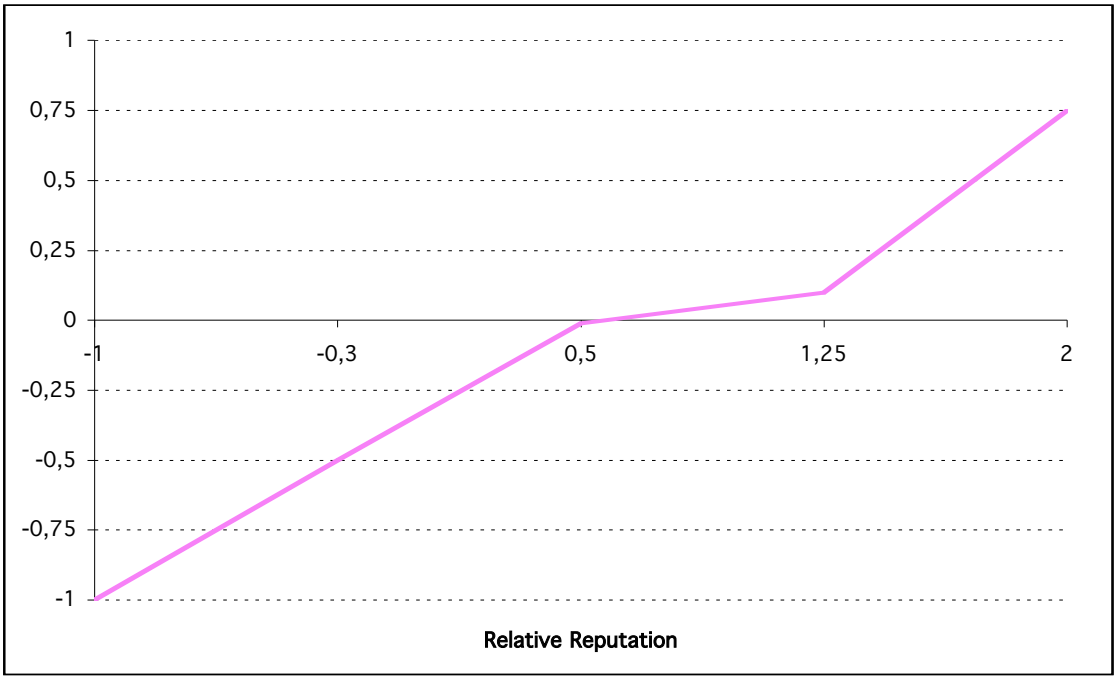
To build this simulation model we do not use historical data of the electricity market. To keep the model as simple as possible relative variables are used wherever possible.[xvi] The average market price is exogenous and in the first step the price set by the independent retailer is constant.

As mentioned above, we assume that the switching rate depends on the price gap, the reputation of the retailer and the sluggishness of the customers. The reputation of the retailer depends on cash burning, so the actual liquidity is compared to the liquidity at the beginning. If the retailer is able to keep its liquidity there is no change in reputation, if liquidity drops he looses reputation and vice versa. This reputation is compared to the average reputation of market players. The price is constant and the average market price decreases slowly. As negative effects on the switching rate are allowed and as we assume that one or more negative effects cause a negative switching rate (churn rate), the equation looks like this:[xvii]

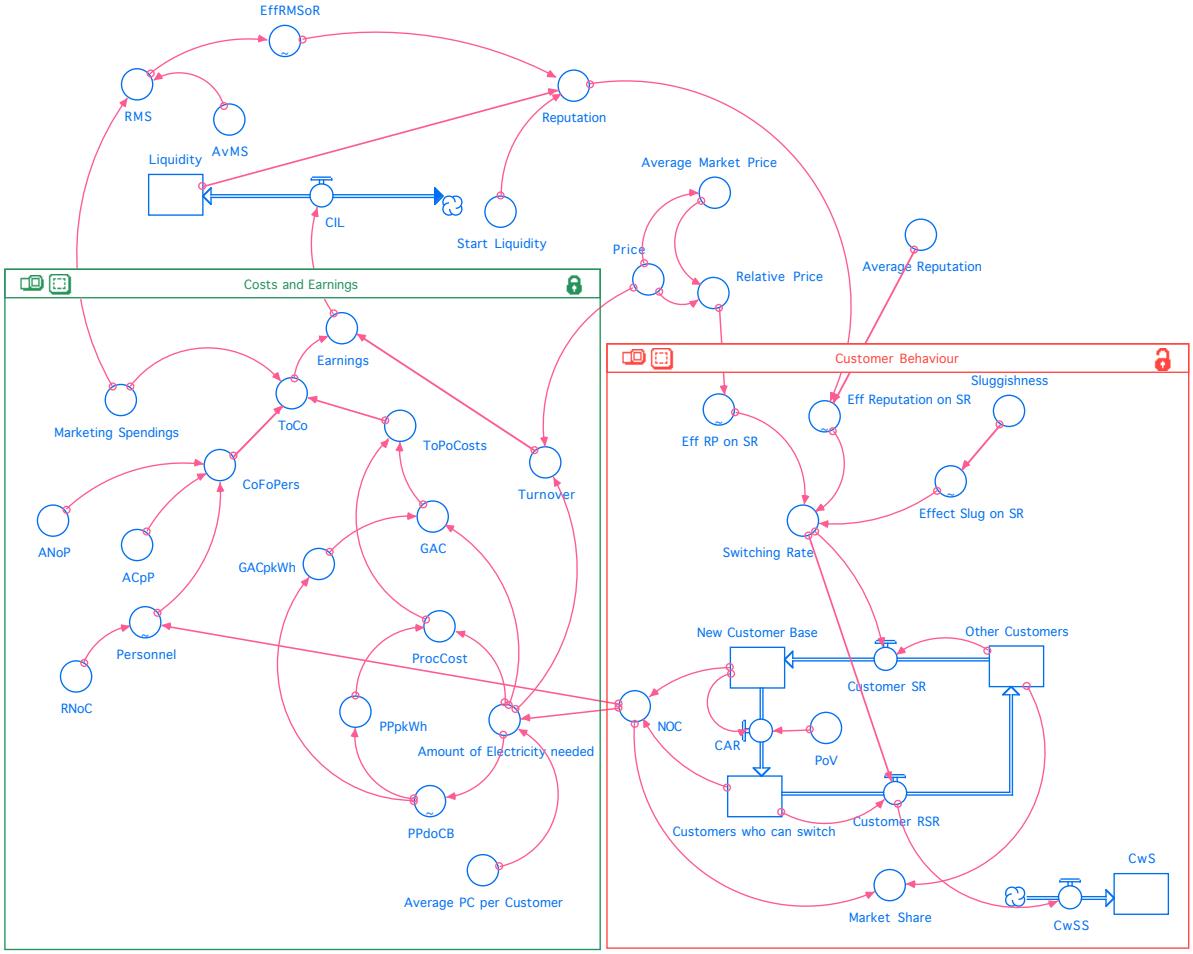
```
Switching_Rate = SMTH3((ABS(Eff_Reputation_on_SR) + ABS(Eff_
        RP_on_SR))/ 2, 3) * (IF(Eff_Reputation_on_SR < 0 OR
        Eff_RP_on_SR < 0) THEN(-1) ELSE(1)) * Effect_Slug_on_SR
```



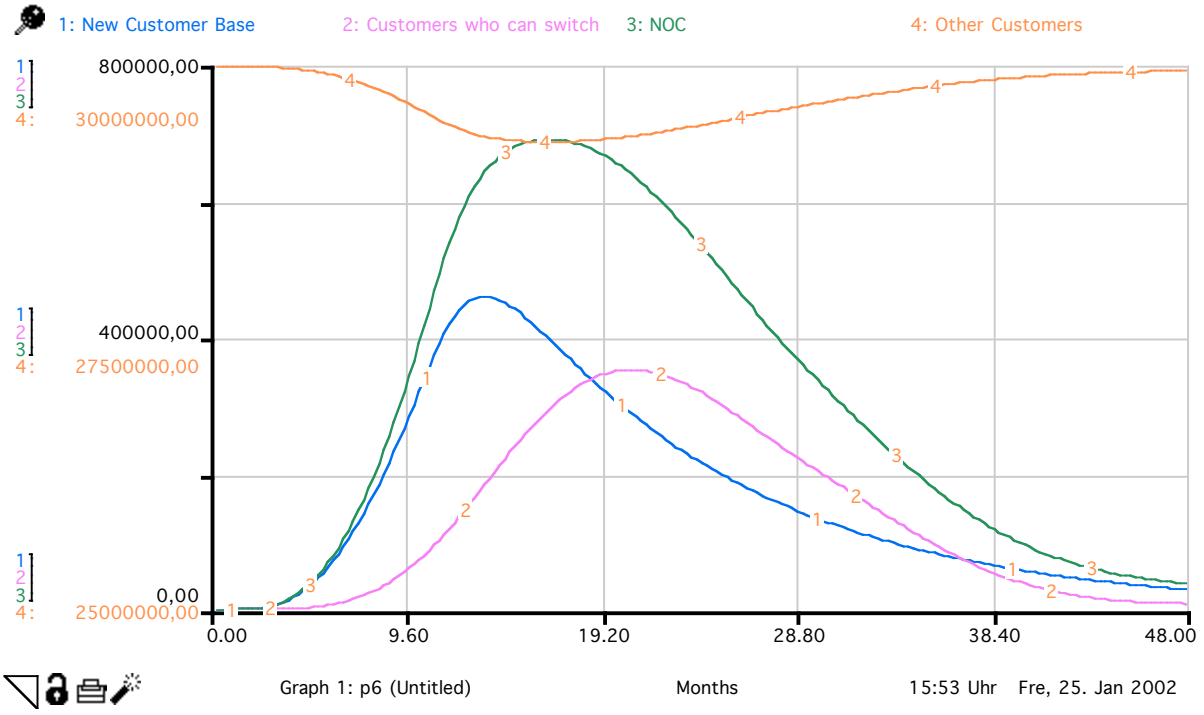
Graphic 6: Effect of Relative Price on Switching Rate



Graphic 7: Effect of Relative Reputation on Switching Rate

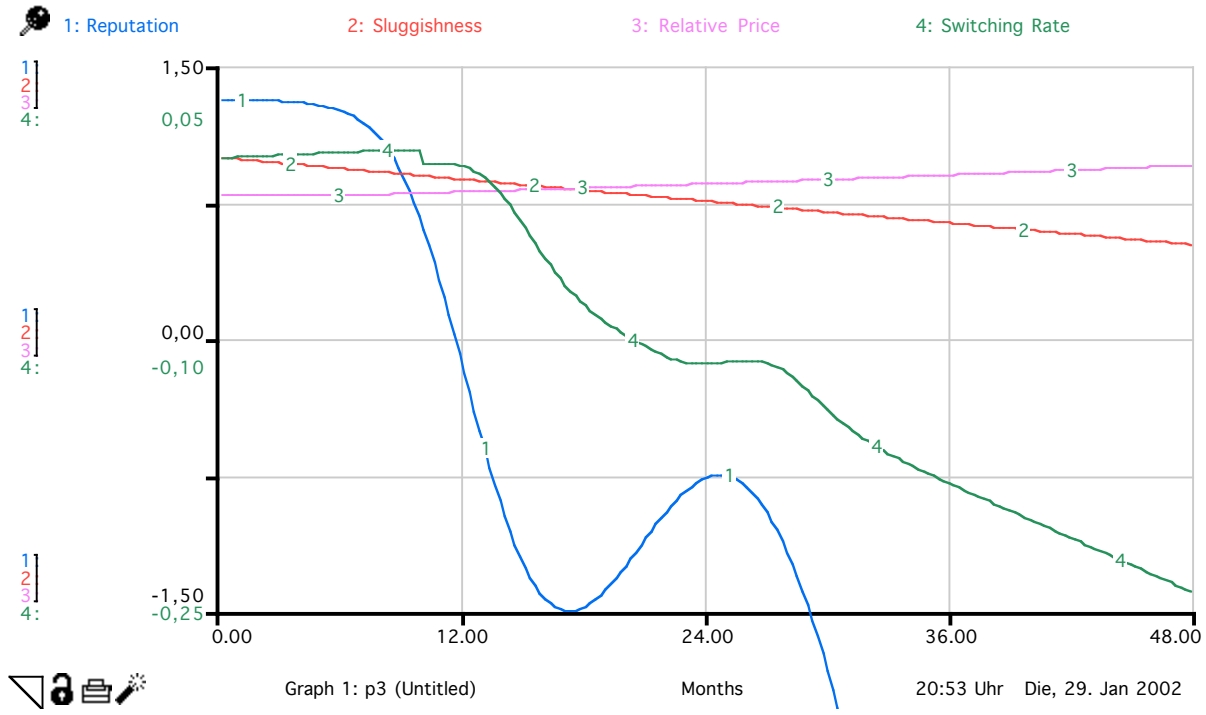


Graphic 8: Structure of Simulation Model

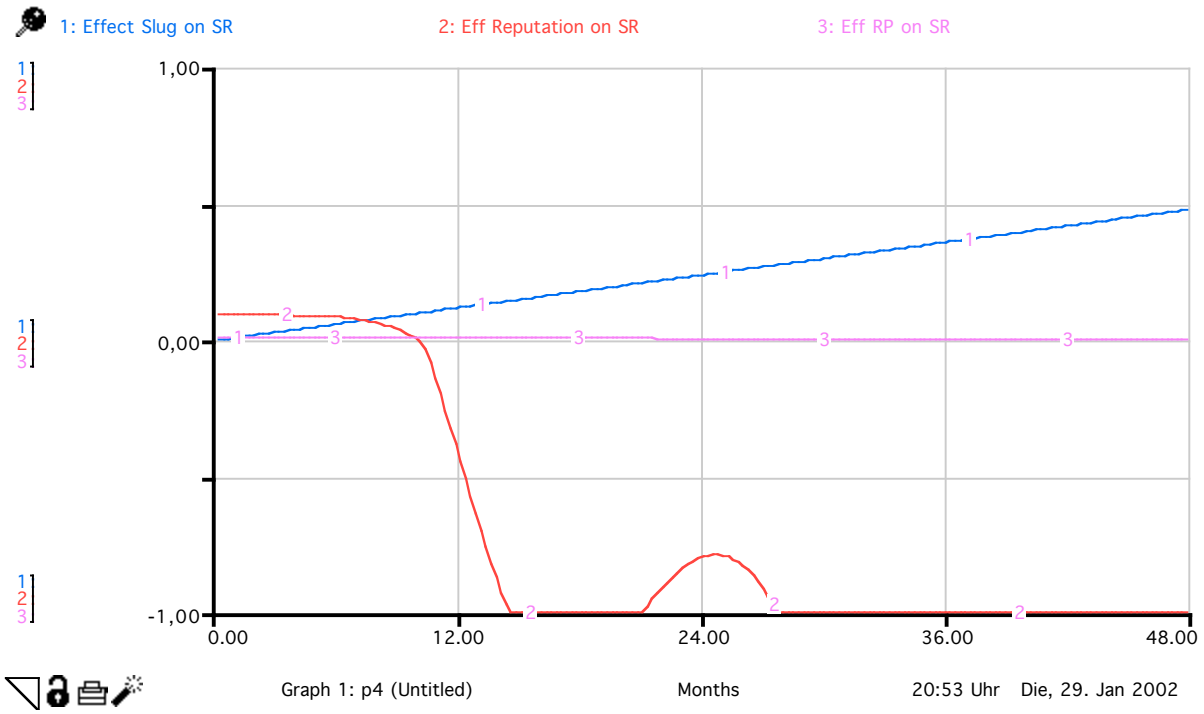


Graphic 9: Market Conduct and Customer Behaviour

Graphic 9 shows the conduct of the modelled market of household customers. Even though the customers trust the new retailers in the beginning, and leave the incumbents, after a period of about 16 months the net switching rate becomes negative.



Graphic 10: Reputation, Sluggishness, Relative Price and Switching Rate



Graphic 11: Conduct of Effects on Switching Rate

Graphic 10 shows the three critical input variables for the switching rate and the switching rate itself. It is clearly visible, that the switching rate follows the conduct of the reputation. If we have a look at the effects on the switching rate (**Graphic 11**) this content is even more obvious. Due to our assumption mentioned above, one negative effect is sufficient to stop the acquisition of new customers. On the other hand it is possible to burn money and have a good market reputation. This is only possible if the retailer has a good financial backing and is able to transport a clear signal to the market. The lesson learned by the incumbents is that customer relationship management is essential and that a good market reputation is is crucial for the business.

[i] These are local utilities, founded and owned mostly by the community. Due to the liberalization and a low in public cash balance, parts of these utilities are sold to private investors and companies.

[ii] Verordnung über Allgemeine Bedingungen für die Elektrizitätsversorgung von Tarifkunden (AVBEltV), Bundestarifordnung Elektrizität (BTOElt), Technische Anschlussbedingungen (TAB). The several states within the Federal Republic of Germany are called *Bundesländer* or just *Länder*.

[iii] From 1999 to 2000 the price for imported coal rose about 22%, the price for gas about 45%.

[iv] About 40.3 GW in 1998, as mentioned in Leo Birnbaum et al: „A shopper's guide to electricity assets in Europe", The McKinsey Quarterly, 2000 Number 2, p. 60-67. Though, the average capacity utilization rate of power plants ranks between 84% and 90%, this is quite the same rate as in the manufacturing industry. VDEW-Press release, 29.07.1998, www.vdew.de

[v] Speech of VDEW-President Günter Maquis, April 23 2001, Hannover, www.vdew.de

[vi] The grid access price differs between the utilities. You can have a look at the price structure at www.strom.de

[vii] We are still talking about the household and small business customers.

[viii] For more information about the Verbändevereinbarung visit www.vdn-berlin.de (in German language only)

[ix] Source: various Newspapers, Market Research.

[x] Graphic 4 shows the development of willingness to switch.

[xi] According to a VDEW study (Verband der Elektrizitätswirtschaft e.V.) even only 4% of the medium business customers switched to a new provider until summer 2000. (VDEW-Kundenfokus, Institut Promit/Dortmund, Summer 2000).

[xii] Source: Stern Trendprofil Strom, September 2001.

[xiii] Source: Nielsen S+P, UniSpend, Universal McCann and GfK Marktforschung

* Before merger: Bayernwerk and Preussen Elektra

** Before merger: RWE and VEW

\# January to August 2001

[xiv] Visit www.enbw.de or www.Yellostrom.de for more information about the companies.

[xv] Yello burnt about 500 Million in 2000 and 2001 (Source: various Press articles).

[xvi] You can find the complete listing in the addendum.

[xvii] For information about ithink (the simulation software used) visit www.hps-inc.com

Bibliography

Birnbaum, Leo, Christoph Grobbel, Panos Ninios, Thomas Röthel and Antonio Volpin: „A shopper's guide to electricity assets in Europe", The McKinsey Quarterly, 2000 Number 2, p. 60-67.

Colledge, Justin A., Jason Hicks, James B. Robb, and Dilip Wagle: "Power by the Minute", The McKinsey Quarterly. 2002 Number 1, p.

DG Bank Branchenzentrum (Ed.): "Der europäische Strommarkt – Rahmenbedingungen und Konsolidierungsbedarf im Lichte der Liberalisierung", Frankfurt a. M., 2000.

Energie Baden-Württemberg-Web-Pages, www.enbw.de

Gruner + Jahr AG & Co (Eds.): "Stern Trendprofile: Der Strommarkt – Marken, Wechselbereitschaft, alternative Energiequellen. Status und Entwicklung. Stand September 2001", Contact: Rüdiger Grünthal, Stern Anzeigenabteilung, Gruner + Jahr AG & Co, 20444 Hamburg.

Kalkman, Jaap B. and Michiel Peters: "Branding Electrons", The McKinsey Quarterly. 2002 Number 1, p.

Verband der Elektrizitätswirtschaft (VDEW) (Ed.): "VDEW-Kundenfokus", VWEW Energieverlag, Frankfurt a.M., 2000.

Verband der Elektrizitätswirtschaft (VDEW),Web-Pages, www.vdew.de.

Verband der Netzbetreiber (VDN), Web-Pages, www.vdn-berlin.de.

Yello-Web-Pages, www.yellostrom.de

Addendum

Listing of Simulation Model

```
ACpP = 8000
      DOCUMENT:  Average cost per person per dt

Amount_of_Electricity_needed = NOC * Average_PC_per_Customer
      DOCUMENT:  Ammount of kWh needed, dependend on number ov
                 customers

ANoP = 70
      DOCUMENT:  Average number of personel

Average_PC_per_Customer = 400
      DOCUMENT:  This is the average ammount of electricity conumed
                 by an average customer

CoFoPers = SMTH3((ANoP * Personnel) * ACpP, 3)
      DOCUMENT:  Cost for Personel per dt

Earnings = Turnover - ToCo
      DOCUMENT:  Earnings per dt

GAC = GACpkWh * Amount_of_Electricity_needed
      DOCUMENT:  Total Grid access costs

GACpkWh = 0.045 * PPdoCB
      DOCUMENT:  Grid access costs dependen on ammount of kWh needed

Marketing_Spendings = MAX(0, 90000 - RAMP(250, 12))
      DOCUMENT:  Marketing Spendings per dt

PPpkWh = 0.1175 * PPdoCB
      DOCUMENT:  Price per kWh

ProcCost = Amount_of_Electricity_needed * PPpkWh
      DOCUMENT:  Procurement costs for electricity

RNoC = 20000
      DOCUMENT:  Relative Number of Customers

ToCo = ToPoCosts + Marketing_Spendings + CoFoPers
      DOCUMENT:  Total Costs per dt

ToPoCosts = GAC+ProcCost
      DOCUMENT:  Total Procurement costs

Turnover = Amount_of_Electricity_needed * Price
      DOCUMENT:  Turnover per dt

Personnel = GRAPH(NOC/RNoC)
                (0.00, 0.00), (0.2, 0.25), (0.4, 0.6), (0.6, 0.75),
                (0.8, 0.9), (1.00, 1.00), (1.20, 2.00), (1.40, 3.00),
                (1.60, 3.50), (1.80, 3.80), (2.00, 4.00)
      DOCUMENT:  Dependency of Number of Personel on Number of
                 Customers
```

```
PPdoCB = GRAPH(Amount_of_Electricity_needed)
               (0.00, 1.30), (2e+08, 1.15), (4e+08, 1.00), (6e+08,
               0.9), (8e+08, 0.8)
      DOCUMENT:  Dependency of Price per kWh on ammount of kWh needed

Customers_who_can_switch(t) = Customers_who_can_switch(t - dt) +
           (CAR - Customer_RSR) * dt
      INIT Customers_who_can_switch = 0
      DOCUMENT:  Customers who can switch their provider again.
                 Depends on the period of validity

CAR = New_Customer_Base / PoV
      DOCUMENT:  Customer aging rate. After 24 months they can switch
                 again

Customer_RSR = SMTH3(IF (Switching_Rate < 0) THEN
           (Customers_who_can_switch * (-1) * Switching_Rate) ELSE
           (0),3)
      DOCUMENT:  Customer Churning Rate

CwS(t) = CwS(t - dt) + (CwSS) * dt
      INIT CwS = 0
      DOCUMENT:  Sum of all Customers who switched back.

CwSS = Customer_RSR
      DOCUMENT:  Auxiliary Variable to Sum all Customers who switched
                 back.

New_Customer_Base(t) = New_Customer_Base(t - dt) + (Customer_SR -
           CAR) * dt
      INIT New_Customer_Base = 0
      DOCUMENT:  New Customers

Customer_SR = SMTH3(IF(Switching_Rate > 0) THEN (Other_Customers *
           Switching_Rate) ELSE (0),3)
      DOCUMENT:  Customer switching Rate

CAR = New_Customer_Base / PoV
      DOCUMENT:  Customer aging rate. After 24 months they can switch
                 again

Other_Customers(t) = Other_Customers(t - dt) + (Customer_RSR -
           Customer_SR) * dt
      INIT Other_Customers = 30000000
      DOCUMENT:  Number of Customers of Incumbents

Customer_RSR = SMTH3(IF (Switching_Rate < 0) THEN
           (Customers_who_can_switch * (-1) * Switching_Rate) ELSE
           (0),3)
      DOCUMENT:  Customer Churning Rate

Customer_SR = SMTH3(IF(Switching_Rate > 0) THEN (Other_Customers *
           Switching_Rate) ELSE (0),3)
      DOCUMENT:  Customer switching Rate

Market_Share = NOC/(NOC+Other_Customers)
      DOCUMENT:  Market Share of the Independent Retailers
```

```
NOC = Customers_who_can_switch + New_Customer_Base
      DOCUMENT:  Number of Customers.
      Sum of New Customer base and Customers who can switch again

PoV = 12
      DOCUMENT:  Period of Validity

Sluggishness = 1 - RAMP(0.01)
      DOCUMENT:  Sluggishness of the Customers. Decreasing over time

Switching_Rate = SMTH3((ABS(Eff_Reputation_on_SR)  +
           ABS(Eff_RP_on_SR))/ 2, 3) * (IF(Eff_Reputation_on_SR < 0
           OR Eff_RP_on_SR < 0) THEN(-1) ELSE(1)) *Effect_Slug_on_SR
      DOCUMENT:  Relative Switching Rate

Effect_Slug_on_SR = GRAPH(Sluggishness)
                (0.00, 1.00), (0.25, 0.75), (0.5, 0.5), (0.75, 0.25),
                (1.00, 0.00)
      DOCUMENT:  Effect of Sluggishness on Switching Rate

Eff_Reputation_on_SR = GRAPH(Reputation/Average_Reputation)
                (-1.00, -1.00), (-0.25, -0.5), (0.5, -0.01), (1.25,
                0.1), (2.00, 0.75)
      DOCUMENT:  Effect of Reputation on Switching Rate

Eff_RP_on_SR = GRAPH(Relative_Price)
                (0.00, 1.00), (0.1, 0.75), (0.2, 0.5), (0.3, 0.25),
                (0.4, 0.1), (0.5, 0.05), (0.6, 0.02), (0.7, 0.015),
                (0.8, 0.01), (0.9, 0.00), (1, 0.00), (1.10, 0.00),
                (1.20, -0.01), (1.30, -0.015), (1.40, -0.02),
                (1.50, -0.05), (1.60, -0.1), (1.70, -0.25),
                (1.80, -0.5), (1.90, -0.75), (2.00, -1.00)
      DOCUMENT:  Effect of Price on Switching Rate

Liquidity(t) = Liquidity(t - dt) + (CIL) * dt
      INIT Liquidity = 5000000
      DOCUMENT:  Cash owned by retailer

CIL = Earnings
      DOCUMENT:  Change in Liquidity over time

Average_Market_Price = MAX(Price + 0.01, 0.24 - RAMP(0.001, 6))
      DOCUMENT:  Average Market price (Constant)

Average_Reputation = 1.1
      DOCUMENT:  Average Reputation of the Incumbents

AvMS = 50000
      DOCUMENT:  Average Marketing Spending

Price = 0.19
      DOCUMENT:  Own price (constant)

Relative_Price = Price / Average_Market_Price
      DOCUMENT:  Relative Price.  If average Market Price rises, the
                 relative price decreases - increasing the switching
                 rate (ceteris paribus)
```

```
Reputation = SMTH3(Liquidity / Start_Liquidity + EffRMSoR,4)
     DOCUMENT:  Reputation, dependend on "cash burning"

RMS = Marketing_Spendings/AvMS
     DOCUMENT:  Relative Marketing Spending

Start_Liquidity = 5000000
     DOCUMENT:  Ammount of Cash at the Start of the Simulation

EffRMSoR = GRAPH(RMS)
               (0.00, -0.2), (0.5, -0.1), (1.00, 0.00), (1.50, 0.2),
               (2.00, 0.4)
```

Back to the Top