



Dr. Klaus Heidler  
Solar Consulting

Communications and Renewable Energy

- Marketing and Management
- Public Relations
- Training and Consultancy



Bridging  
the gap

[www.solar-consulting.de](http://www.solar-consulting.de)

0276  
029462110

## PVT Marketing - Some Aspects for Germany



Dr. Klaus Heidler Solar Consulting  
Solar Info Center, D-79072 Freiburg  
Germany  
[www.solar-consulting.de](http://www.solar-consulting.de)



0276  
029462110

### Questions to Heidler (Copenhagen)

- 1 Why should we have a single product for a double need?
- 2 What should they do to have a strategy for PVT?
- 3 How could PVT be further commercialised?
- 4 Drivers and barriers?



0276  
029462110

### The 3 H - Ingredients for Marketing



- Heart – What are the Benefits?



- Head – Systematic Marketing



- Hand – Do it!



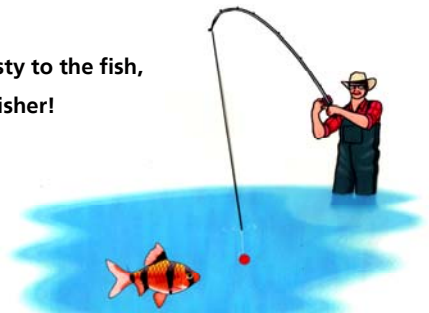
0276  
029462110

### Benefits



0276  
029462110

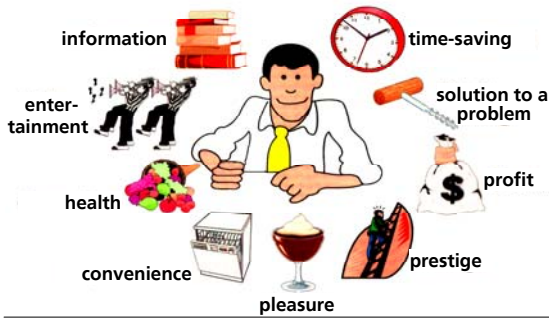
The bait  
must be tasty to the fish,  
not to the fisher!



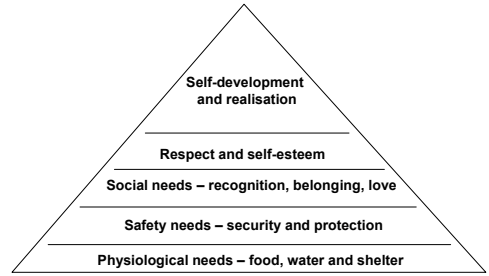
Quelle: Binder-Kissel

0276  
029462110

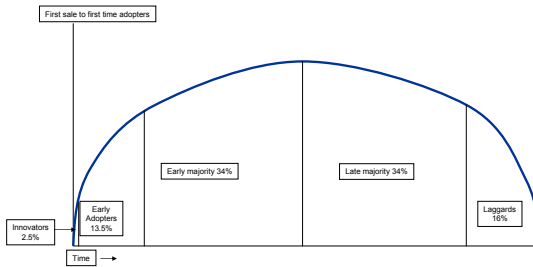
## Offer the client a benefit!



## Maslow's Hierarchy of needs



## New Product diffusion and adoption



## PVT - Substantial Benefits

Benefit	Assessment (very personal)
Profit - e.g. more kWh/€	+++++
Comfort – e.g. cabin smells good	+++
Safety – e.g. hot water without grid	++
Image – e.g. I am especially clever	++

## Systematic Marketing



## Push or Pull?

PUSH	PULL
You have a product and now you need to sell it	Customers feel a need for the product you have

## Marketing Stages

- Analysis of Demand -> Target Segments
- Analysis of Competition-> Valuation, Positioning



Iterative Product Design

- Marketing Communication

## Analysis of Demand

1. Select criteria for market segmentation and identify suitable segments
2. Assess the segments
3. Select target segments

## Provoking Personal Statements for Germany

- 1 There is a battle for space on our roofs.
- 2 Electric energy is more valuable than low-T heat.
- 3 Technical product development only pays off for large markets.
- 4 For large markets you must meet the profit goals of your customers.

## Proposal PVT Product Categories

Category	Remarks
A	Chilled PV – enhancing profits
B	Autarky - enhancing self-sufficiency
C	Concentrator – high T heat
Subcategory	1= Liquid; 2=Air

## Rheinzink



Quickstep (thermal)

a-Si PV on stainless steel foil

## Schüco Synergiedach



PV module and thermal collector of same exterior design

## Solvis Powerdach



PV module and thermal collector (dummy) of same exterior design

## Grammer Twinsolar



PVT in right part – Application: Autonomous system for cabins

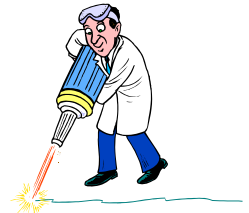
## Some Product Ideas – Hints for Segmentation

Ça	Features	Applications
Chilled PV liq	A1 very simple, low tech, low budget	Public swimming pools (earn money while heating your pool)
	A1 High end architecture: integrated in roofs, facades in combination with heat pump	1) Domestic hot water, heating support. 2) Image driven commercial buildings
Chilled PV air	A2 Air collector with minimum research efforts – PV is “cover glass” and absorber	Workshops, sheds, biomass dryers with high demand of low T air, high air exchange rate, low Delta T
	A2 High end architecture – rest see above	Image driven commercial buildings (rest see above)
Autair	B2 Rugged 1 piece system	Cabins, holiday lodges where PVT provides air exchange (smells good)

## Define Target Segments



Forget the watering can approach



Focus in on your target group!

## Criteria for Product and Application – the Profit Road

- PVT must be a good PV module
- Application must have a substantial demand of low-T heat (positive: demand in summer, short transport, no storage or fancy control necessary)

### Profit rule

$$\text{Electric Surplus} + \text{thermal revenue} > \text{Additional investment} + \text{additional operating costs}$$

## Additional Criteria for Profit Applications

- Thermal need of the building defines the area of PVT. Rest of area can be used for PV only
- As PV output is key factor in most cases, uncovered PVT seems more promising (reflection, temperature, stagnation)

## Segment Example: PVT for Drying Biomass

Air – PVT, PV module as “uncovered absorber” (Type A2)

PV: 1 kWp costs 4000 €, covers 10 m<sup>2</sup>

PVT: Electric surplus 7%; 0,025€/kWh(th); lifetime 20a

- 1000 €/kWp  
max. allowable additional investment for PVT
- Energy of electric surplus is eaten up by fan
- 350€/kWp in 20a revenue of electric surplus  
“Profit”:  $350 / (4000+1000) = 7\%/20a$  !!!!!

## Segment Biomass (continued): Applications?

- Wood chips, firewood sticks
- Hay, herbs, fruits
- Sludge from sewage disposal
- Tobacco, coffee etc. in southern countries
- Caoutchouc in Sri Lanka

## Segment Biomass (continued): Market Size?

Germany, agricultural buildings

Question:

How much is 1% of solar suited agricultural roof area?

- 800 km<sup>2</sup> total solar suited roof area in Germany (Witzel04)
- 36.5 Mio. employed in D, 1.9 Mio in agriculture

Answer: 420.000 m<sup>2</sup>

@ 500 EUR/m<sup>2</sup> this would be equivalent to 210 Mio. EUR  
Demand analysis to check whether this is market size!

## Marketing Stages

- Analysis of Demand -> Target Segments
- Analysis of Competition-> Valuation, Positioning



Iterative Product Design

- Design of Marketing Communication

## SWOT Analysis of Competition

1. Strengths, Weaknesses of product
2. Options, Threats of markets
3. Assess competitors and developments now and in the future

## Illustration SWOT Analysis: Some Examples

1. Strengths: One piece for two needs
2. Weaknesses: Different quantitative demand for electricity and heat
3. Options: High efficiency thin film PV directly deposited on absorber could make electricity a standard by-product of thermal collector
4. Threats: Demand for low T heat will drop. Supply will rise (co-generation)

## Preliminary Answers of Heidler (1):

Why should we have a single product for a double need?

Because (and only if) it gives the customer a higher benefit:  
e.g. more kWh per € spent

## Preliminary Answers of Heidler (2):

What should they do to have a strategy for PVT?

### PILOT:

Immediate marketing communication for **available products** to stimulate competition and exploitation of immediate market potential without large research effort.

### BULK:

Quantitative market analysis for **products to be developed**:

- Demand analysis
- SWOT analysis of competition
- After that: Design marketing communication

## Preliminary Answers of Heidler (3):

How could PVT be further commercialised?

1. **Immediate marketing** communication to stimulate competition and exploitation of market potential without large research effort.
2. **Quantitative market analysis** will provide arguments to foster motivation of industry.
3. **Finding applications** with high add-on benefit may be crucial. Look also to developing countries!
4. Find the golden niche **first**, then develop with tail wind.

## Preliminary Answers of Heidler (4):

Drivers and ...

- Renewable energy will grow extremely fast
- Charming idea – full of additional benefits
- Energy prices will rise – more profit, more need for security

... barriers

- Low public awareness
- Add-on margin very small
- 2 crafts – 2 different installation infrastructures
- 2 needs – 2 demands
- Low-T heat abundant and cheap in industrial countries

Do it!



## Citation from Fraunhofer Marketing Handbook: Typical Fatal Errors

- Own enthusiasm overrules sober analysis of market needs
- Market analysis is done to prove the own opinion, not to find out the genuine market conditions.
- Selective, non-quantitative analysis: The opinion of 1 person or 1 company triggers important decisions.
- Product development starts BEFORE market analysis.

## Leave the Treadmill!



**Before you develop the product:  
A thorough market analysis helps you to get on the  
road of success!**

