SOLAR Heating for Industrial Process

Together Toward Efficient Production

Business Development and Growth Management for Solar Thermal Markets

Business Development – Day 1

January 12th , 2020

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Introduction

- The training is designed for senior firm members and middle management
- It aims at helping the firm increase the effectiveness of it marketing and sales, improve the business model and operations, as well as determine the costs, pricing and means to access finance
- The training is highly interactive and will allow attendees to determine all the above for their firm during the training.

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Day 1

- To understand the market and the clients
- Conduct an analysis of the firm
- Develop the firm offering to the best client segment

Registration and Welcome Remarks	09.00 to 9.30
Energy Sector Context	09.30 – 10.00
Market Analysis and Segmentation	10.00 – 10.45
Client analysis – Motives	10.45 – 11.30
Break	11.30 – 12.00
SWOT	12.00 – 12.45
Developing a client offering	12.45 – 13.30

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Day 2

- Develop the business model of the firm including how the business process is organized
- Outline marketing plan and manage sales

Registration and Welcome Remarks	**09.00 to 9.30**
Review and reflections	09.30 – 10.00
Developing your business model	10.00 – 10.45
Developing your business process	10.45 – 11.30
Marketing Strategy	11.30 – 12.00
Marketing Plan	12.00 – 12.45
Managing you marketing and sales	12.45 – 13.30

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Day 3

- determining actual costs, overheads, cost structure, and learn how to price after sales services. Firms will learn how to utilize data and business analytics to assess its performance as well as improve it. Finally, the firm will learn how to access finance and investments for itself and its clients.

Registration and Welcome Remarks	**09.00 – 09.30**
Review and reflections	09.30 – 10.00
Determining your actual costs	10.00 – 10.45
Cost of after sales	10.45 – 11.30
Business Analytics	11.30 – 12.00
Access to finance	12.00 – 12.45
Recap and reflections	12.45 – 13.30

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Day 1 - Agenda

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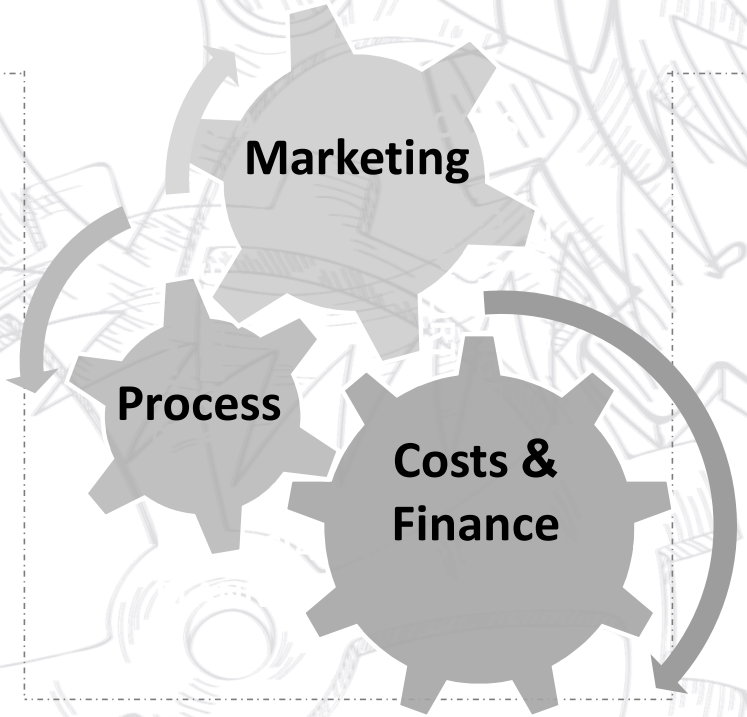
Workshop Flow

Building you offering

- SWOT
- Developing a client offering
- Developing your business model



Understanding the market

- Energy Sector Context
- Market Analysis and Segmentation
- Client analysis Motives

Business models | Strategic plans | Organiz./operations | Understanding / analyzing markets

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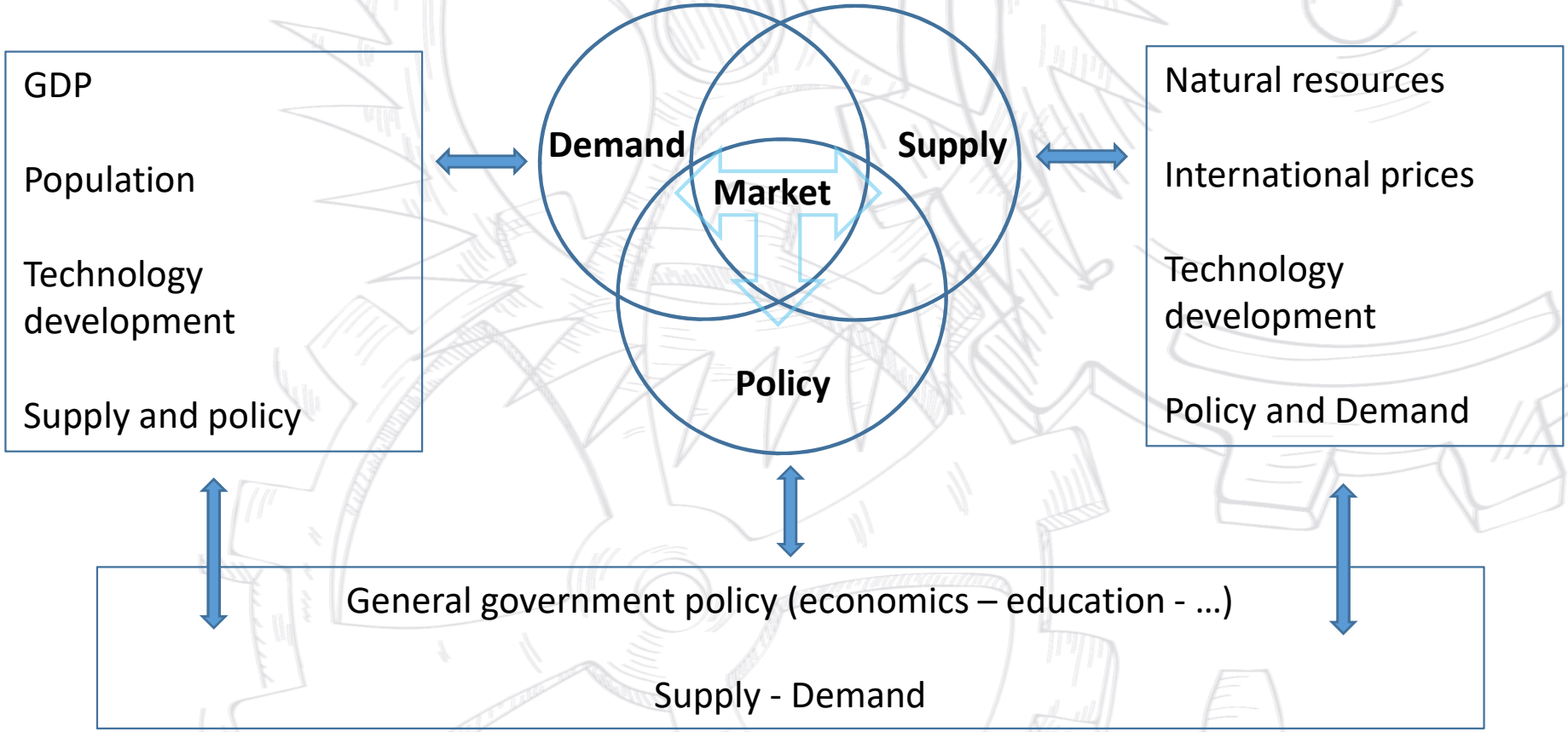
Energy Context

Factors Shaping Energy Markets



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Features of Egypt Energy Market

- It's a fuel market rather than value market → type of client fuel alternative is key
- *Regulated prices → allows planning but limits options*
- *Monopoly on transmission → stresses supply chains → where to operate becomes a key*
- *Moving to cost recovery from availability → higher opportunities for alternative fuels and renewable energy*
- *Demand driven rather than supply driven → more room for liberalization*
- *High growth market → more room for private sector*

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Demand Side – Consumption – What to Look For

- Absolute values
- Trends → Growth/Decline rates
- Consumption in terms of fuel
- Consumption in terms of sector
- Consumption in terms of fuel per sector
- Balance of number of users and energy per user

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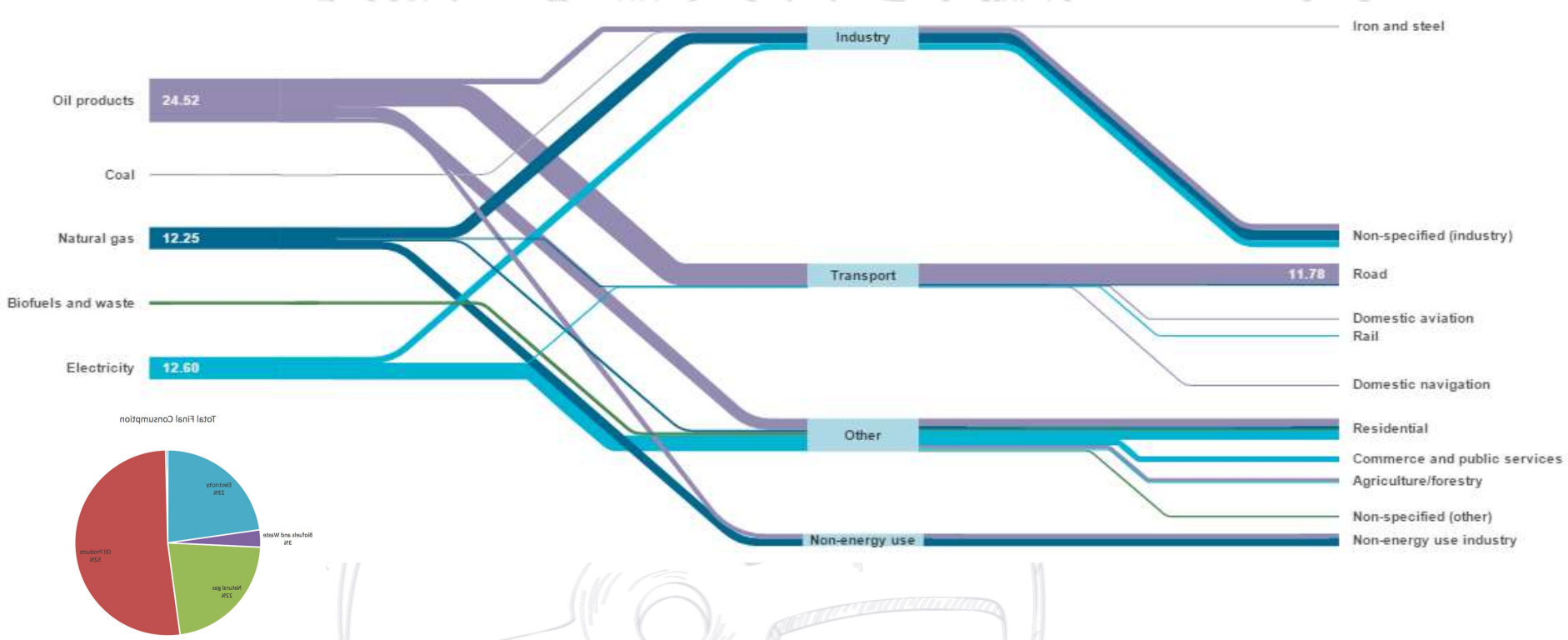
Demand Side - Consumption



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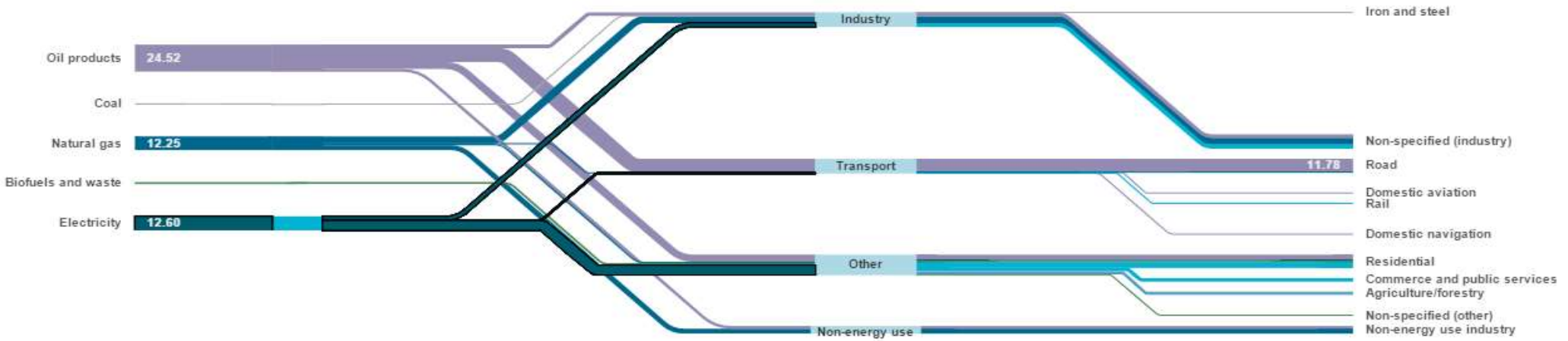
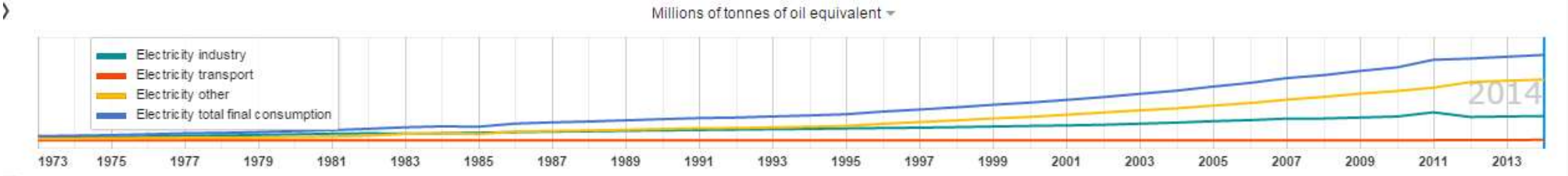
Demand Side – Consumption – Electricity





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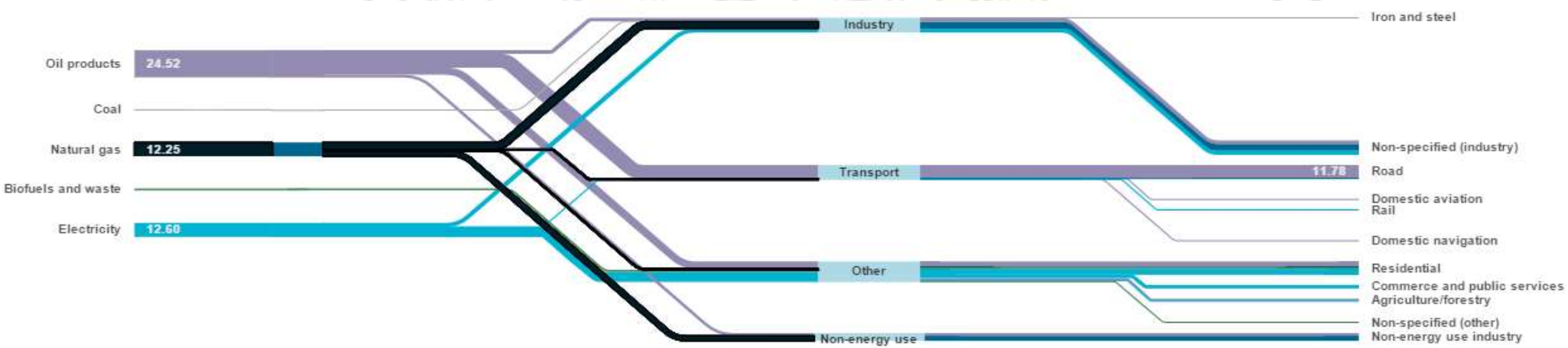
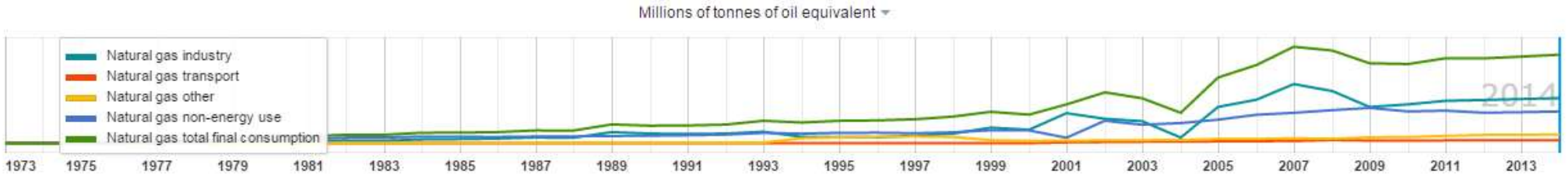
Demand Side – Consumption – Natural Gas





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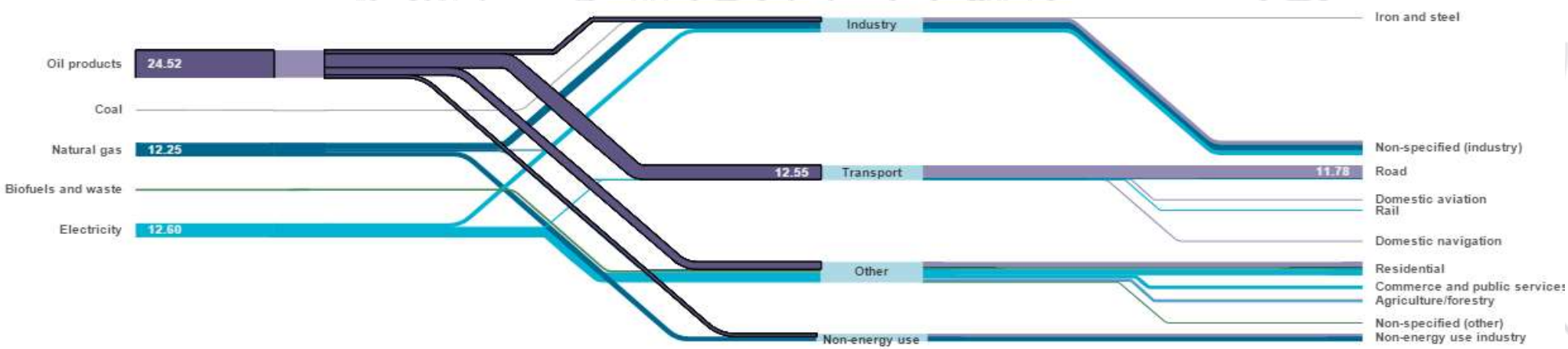
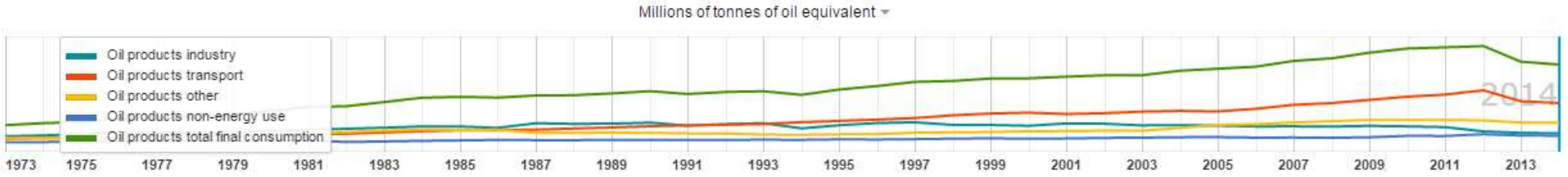
Demand Side – Consumption – Oil





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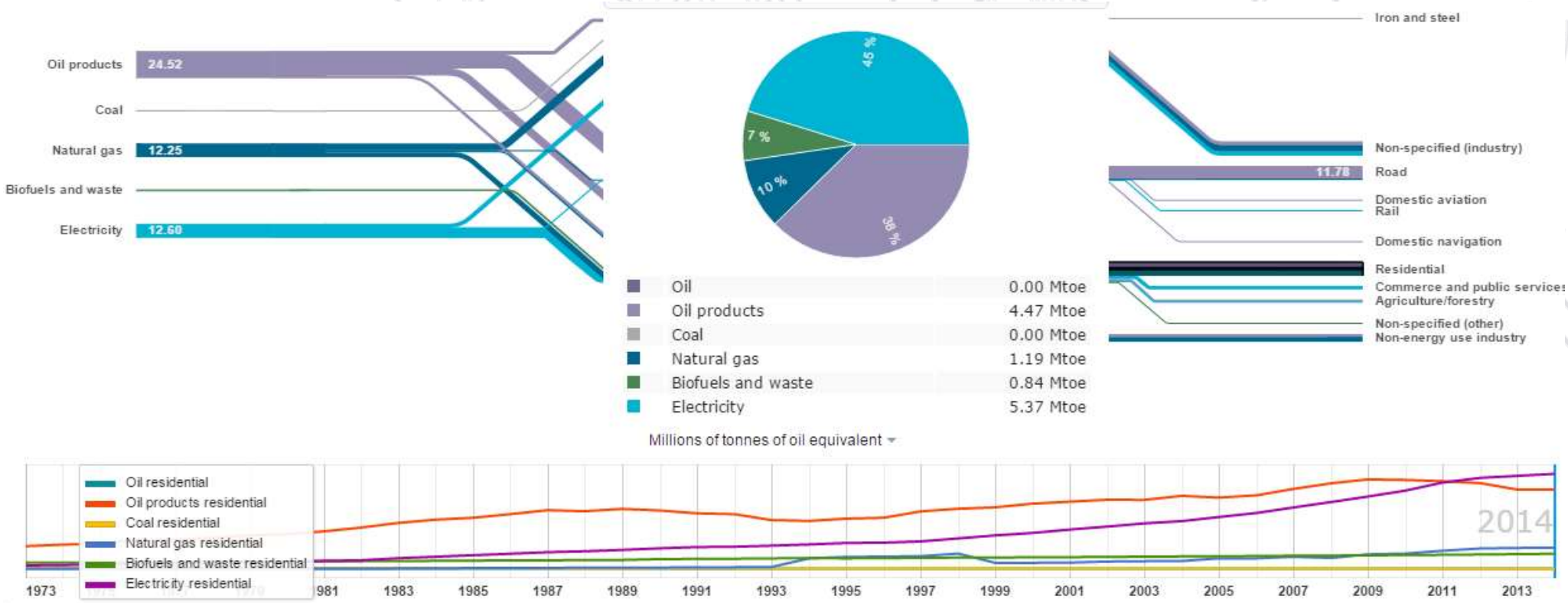
Demand Side – Consumption – Sectors Trends



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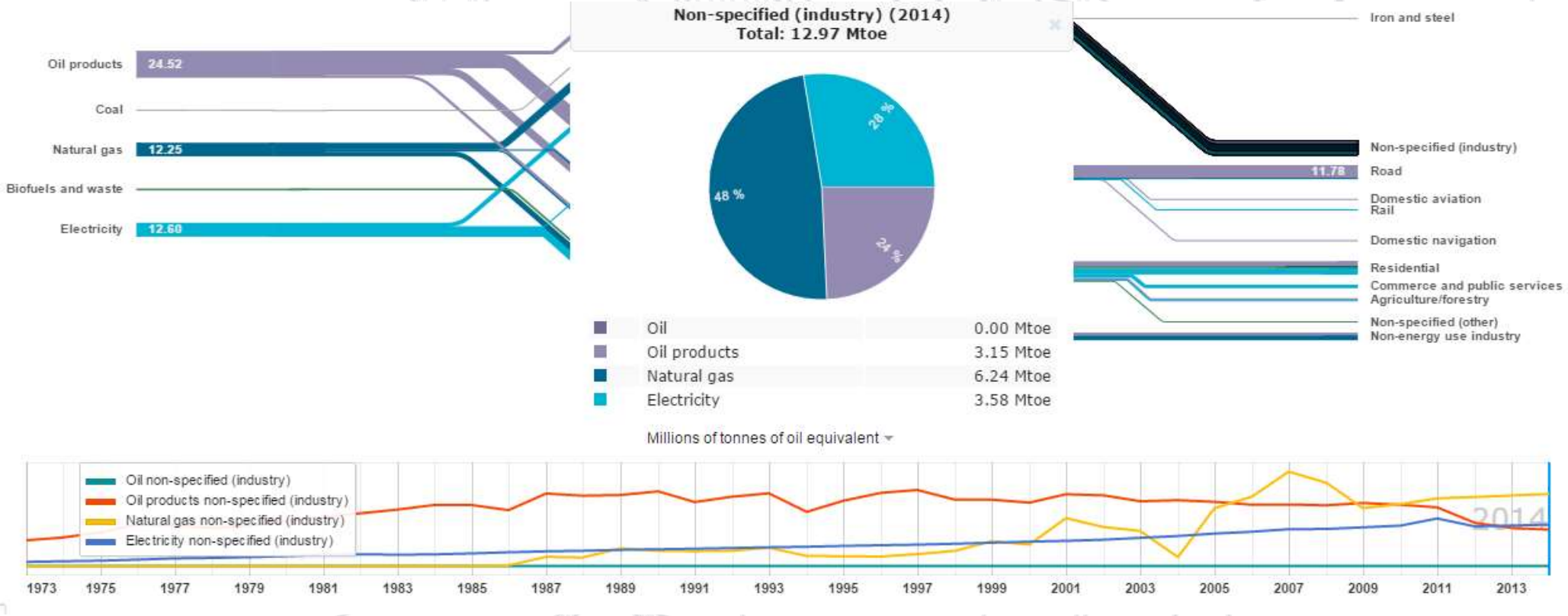

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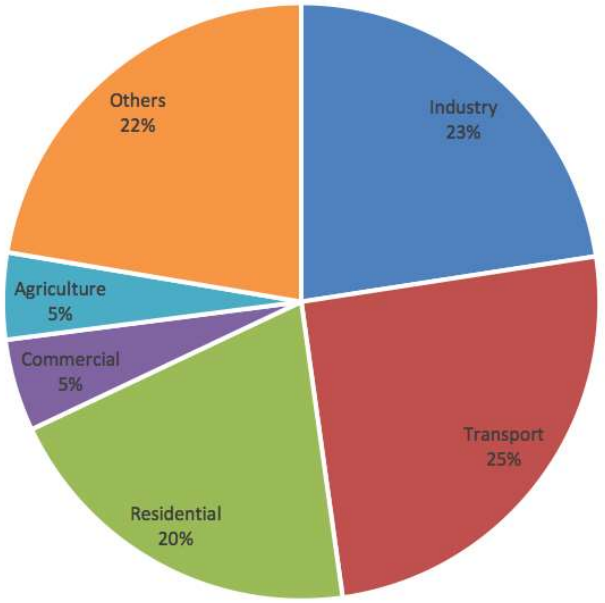
Demand Side – Consumption – Subsectors Analysis

- Subsector analysis can be crucial, sectors are generally
  - Industry
    - Subsectors **(food and beverages and textiles)**
  - Commercial
    - Tourism – **Retail**
  - Residential
    - Urban – **Suburban** and rural
  - Transportation
    - Aviation – Road - **Rail**
  - Consumer Products ??
  - Generation



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Demand Side – Consumption – General Trends

Since 2011		Predicted		Range of Prediction
Electricity	2.5%	Total	6%	3.0% - 7%
Oil	-5.0%			
Natural Gas	2.5%			
Waste	2.9%			

In fuel → Industry is the fastest growth
In Electricity → Residential and commercial are the fastest growing
Total → Agriculture growth of energy consumption is highest

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Demand Side – What Shapes Consumption

- Simple models relay on GDP growth percentage and population growth percentage
- Advanced models for % growth

Energy = Population + GDP per capita + Energy per unit of GDP

- Band analysis allows market size prediction and risk assessment
- Can be applied to sectors and subsectors alike

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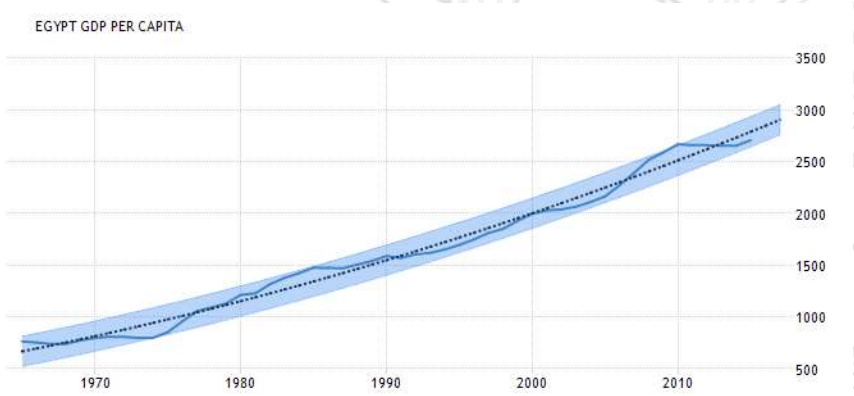
Demand Side – Band Analysis



Energy Min = 1.6 + 1.4 – 0.1 = 2.9%

Energy Expected = 6%

Energy Max = 1.9 + 5.1 + 0 = 7%

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Demand Side – Projections

- Can be done for a sector and type of fuel
- For instance one can predict natural gas use by Sub-urban residential
- Can be done for a country and city or a province or a region
- Allows one to assess markets size expected growth
- For sectors replace per capita to per unit consumption , i.e fedan for agriculture, meter square for residential and commercial

"Prediction is very difficult, especially about the future."
Niels Bohr

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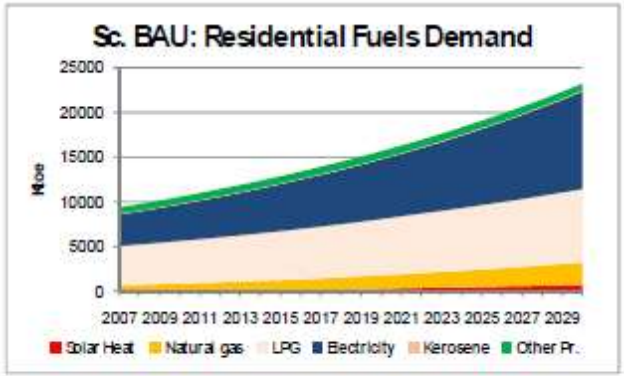
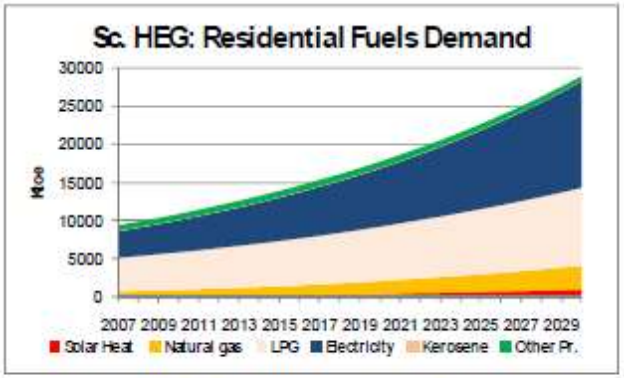
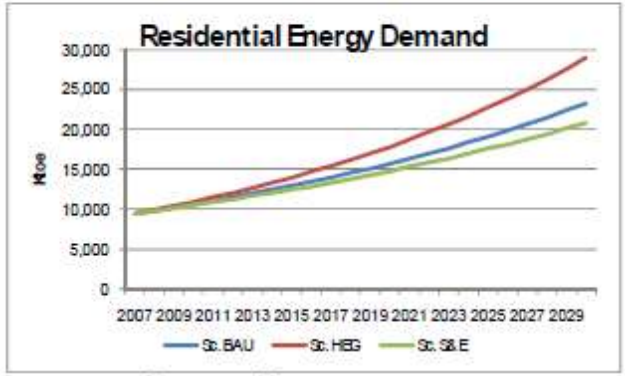
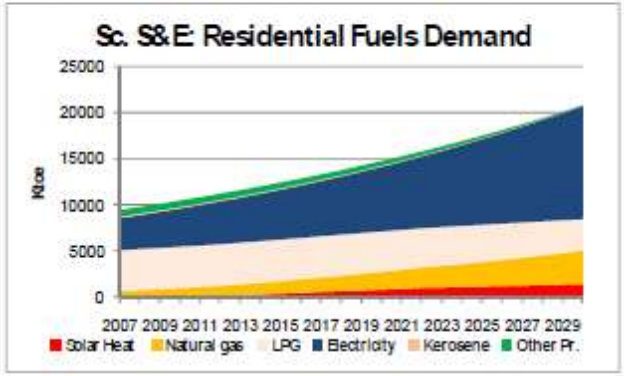
Demand Side – Projections









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Demand Side – In Short – Analysis

- Growth prediction formulas
- Values and predictions are crucial
- Markets number of users vs per capita users
- Markets should be analyzed
  - per type of fuel (absolute and growth rate)
  - Per type of sector (absolute and growth rate)
  - Per sector per type of fuel (absolute and growth rate)

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Supply Side

- Elements determining supplies
- Grid capacity, electric energy projections
- Current Energy Mix
- Projections of Supply
  - Gas resources
  - Nuclear
  - Oil
  - Renewable
- Demand supply balance




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Supply Side – Elements determining supplies

- Supply growth for fossil fuels is determined by
  - Natural reserves
  - Capacity to attract investment
  - Rate of project development cycle
- For instance Egypt gas reserves increased by 30 to 50% in 2015 yet production rate will begin increasing in 2019 at 20% at most and levels at 3% to 5% growth rate after
- This is compounded by cycle to develop power stations

China's Energy Sector About To Open Up For Foreign Investment

By Dave Forest - Aug 05, 2016, 9:29 AM CDT

This past March, I wrote about some intriguing comments from the Chinese government. Suggesting that the nation might be on the verge of opening major opportunities in its oil and gas sector for outside investment.

And news this week appears to have confirmed this trend is now in motion.

That development came from state oil and gas player China Petroleum & Chemical Corp. announcing it will sell a major stake in a key pipeline asset to

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Egypt blackouts raise new worries

Experts attribute power shortages to lack of foreign investment

Published: 12:30 February 12, 2014
Zawya

GULF NEWS

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Cairo — Egyptians are suffering through a rare spate of winter power outages, an indication they could sweat through a hot summer when soaring temperatures are likely to bring nationwide blackouts, experts

Ramping up gas production in Egypt

Egypt | Energy

Economic News

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30 Mar 2016

Recommend

In spite of the global slowdown in capital spending by energy companies, Egypt's upstream gas industry is attracting multi-billion-dollar investments as it looks to meet rising domestic demand.

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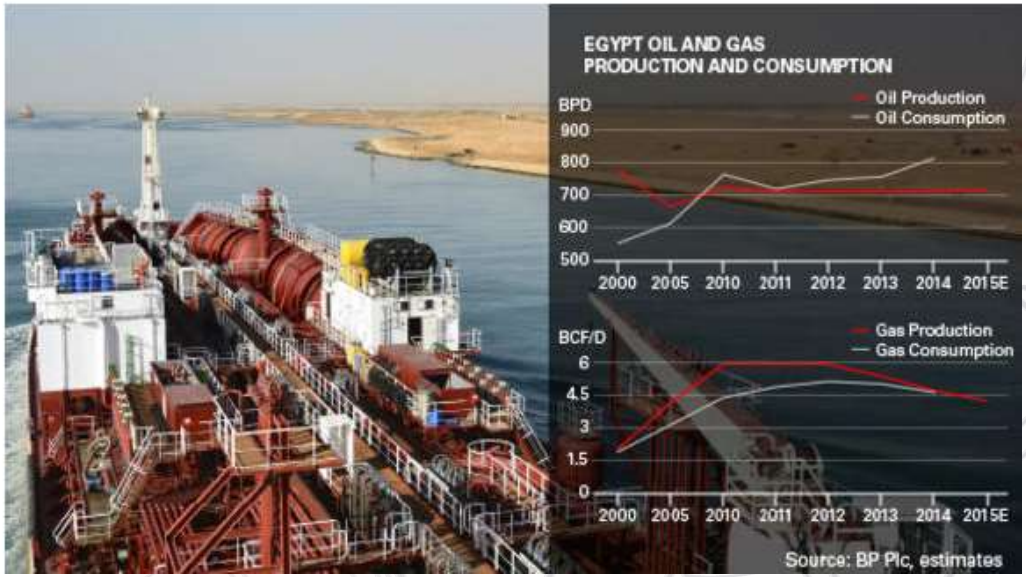
Supply Side – Elements determining supplies

- Supply of nuclear power is determined by
  - Capacity to attract investment
  - 10 years minimum life cycle
- For same rating a nuclear plant takes 10 years to develop versus 4-5 years for gas versus 2 years for PV versus 6 month for biodiesel and RDF plant



WORLD NEWS | Thu May 19, 2016 | 7:40am EDT

Russia to lend Egypt $25 billion to build nuclear power plant

Russia will loan Egypt $25 billion to finance building and operating a nuclear power plant in Egypt, the official gazette said on Thursday.

Egypt opens up oil and gas sector to global players

Zawya

A fresh bidding round will showcase the country's hydrocarbons potential and eventually put much-needed FDI into its coffers

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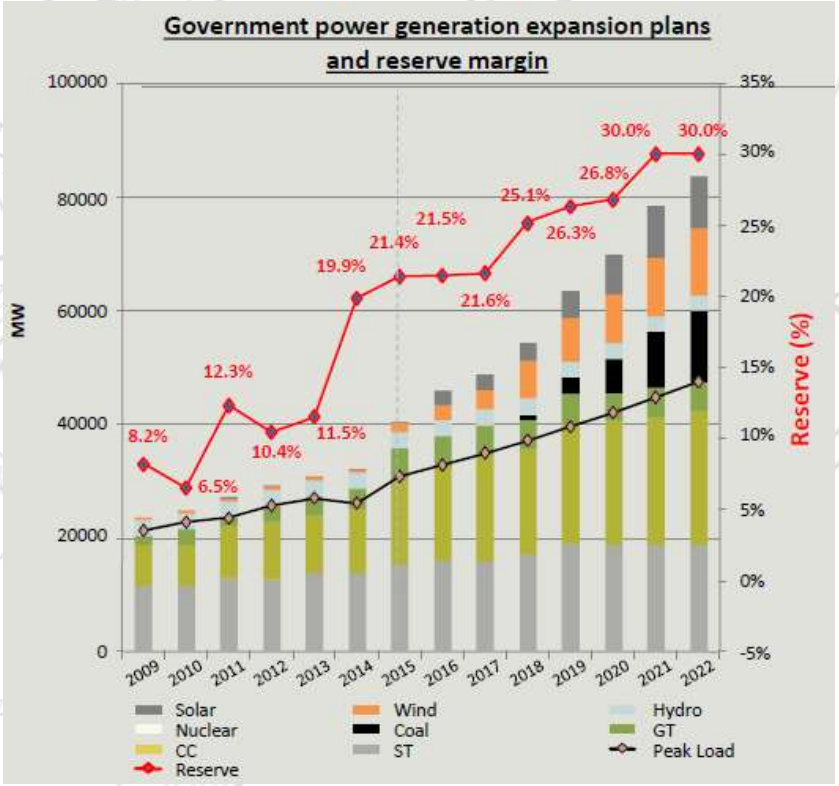
Supply Side – Grid Capacity Versus Energy - Electric

- For electricity to be delivered the country needs to build a grid capacity that matches the power consumption peak as well as energy
- Egypt peak grid consumption grows at 4% and can be matched by government investment
- Grid growth means less black outs
  - means market for backup systems will decrease
  - means grid connected consumers of electricity will not purchase based on energy availability
- Slow growth in energy means need for imports which reflects as an increased price, Egypt energy supplies growth cant meet its demand



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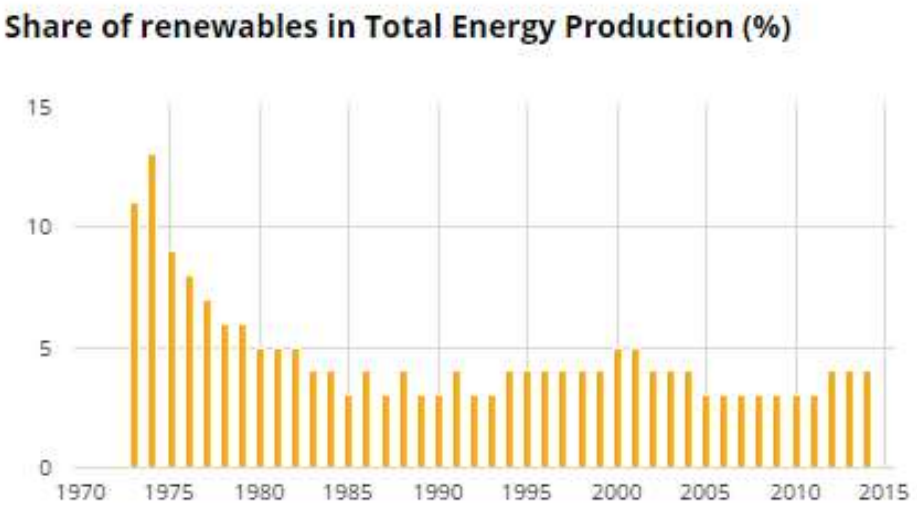
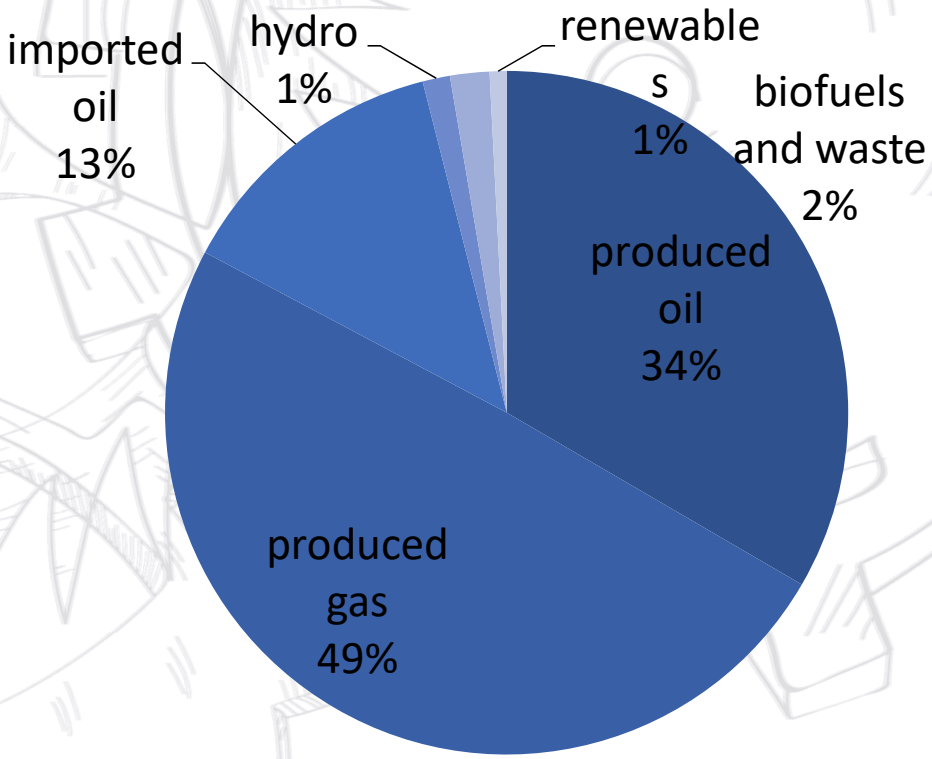
Supply Side – Current Energy Mix





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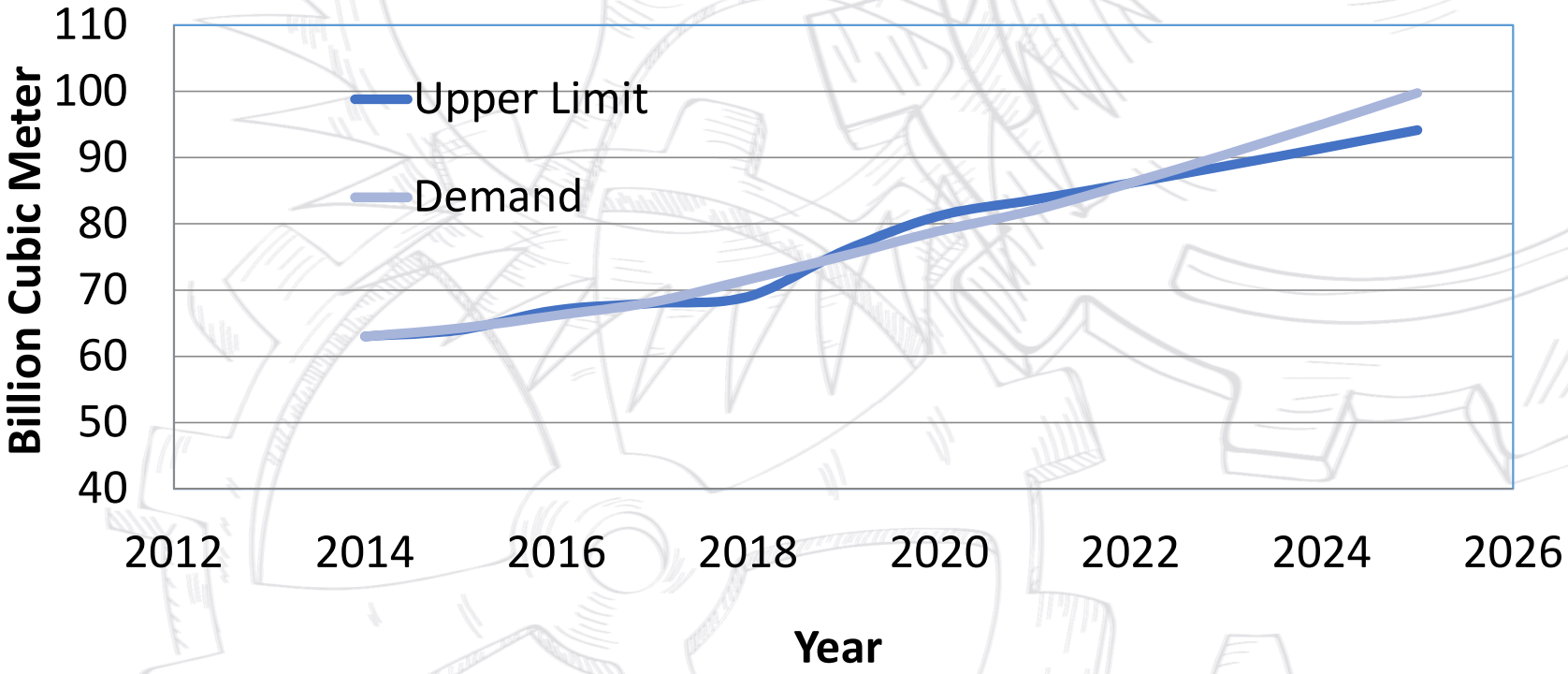
Supply Side – Natural Gas

- Egypt natural gas production is expected to grow at a lower rate than the consumptions - It is highly reliant on exploration and extraction technologies Reserves could be doubled in optimistic scenarios



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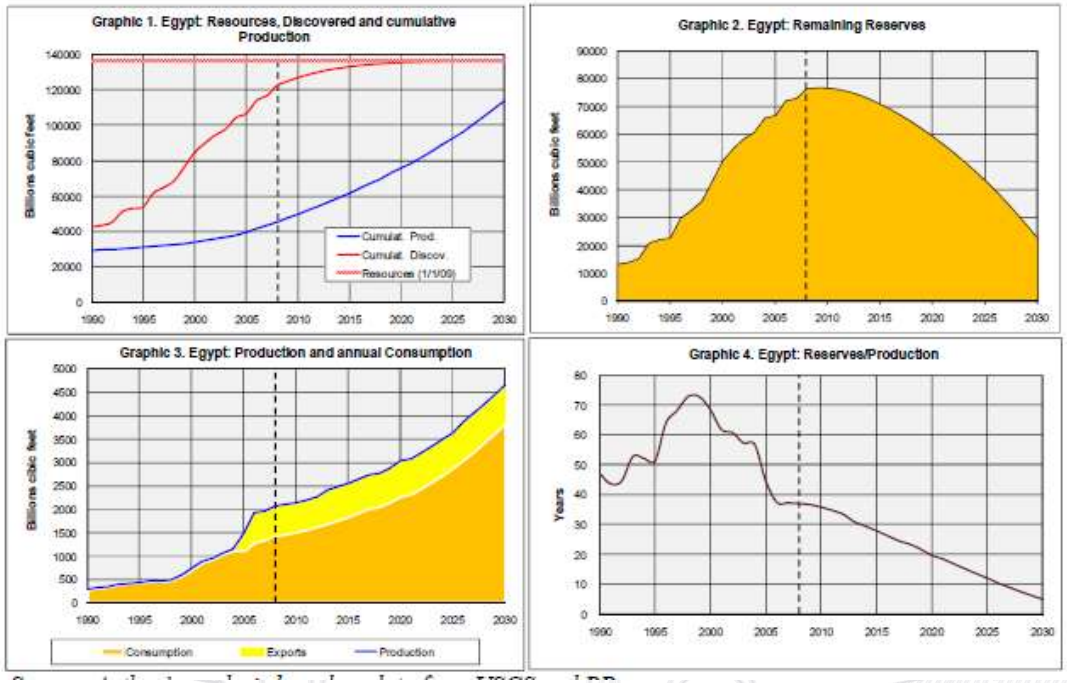
SOLAR Heating for Industrial Process
Utilizing Solar Energy for Industrial Process Heat

Supply Side – Natural Gas

- Will remain a major player in electricity sector



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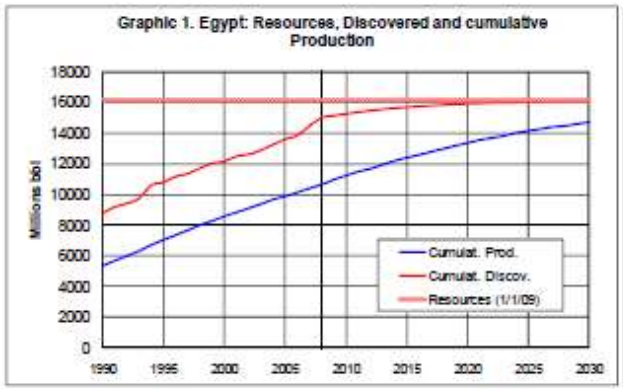
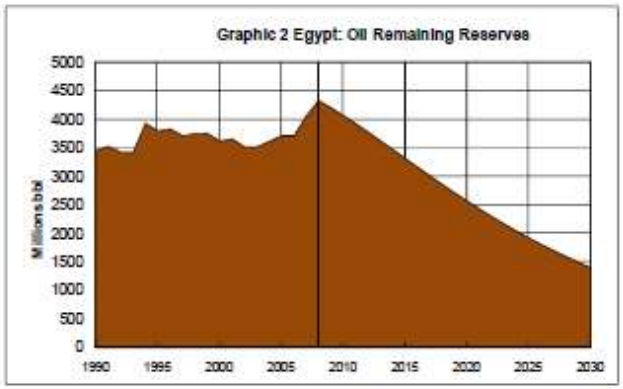
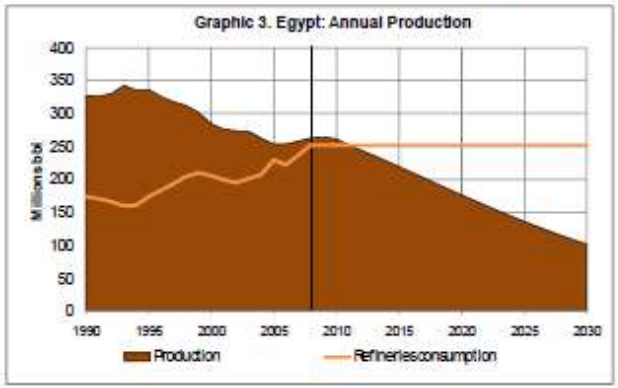
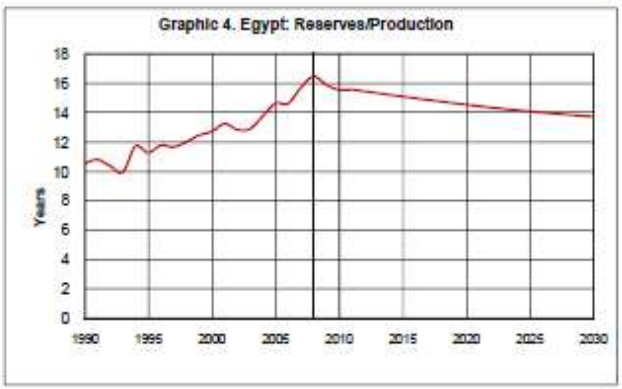
Supply Side – Oil









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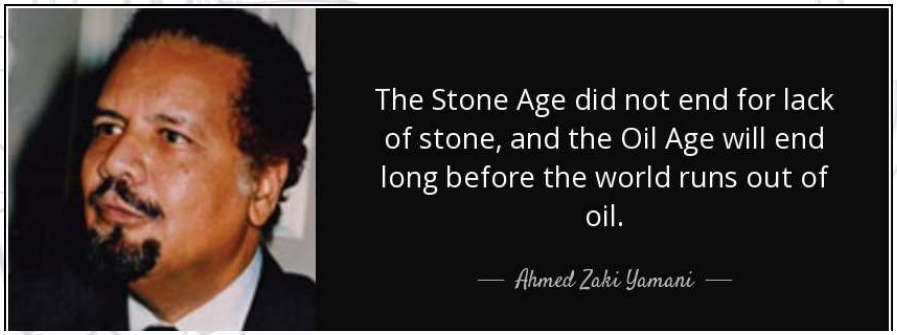
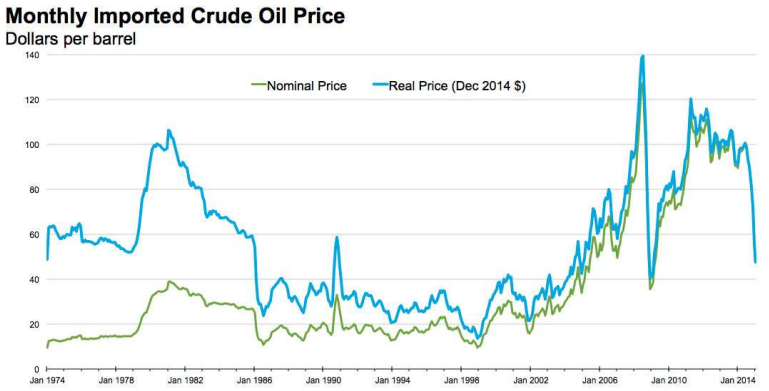
Supply Side – Oil

- Egypt supply of oil is irreversibly declining
- Consumption is increasing mostly in
  - transportation sector
  - agriculture sector
  - Off grid applications
- The oil issue for transportation is a crucial international problem with no complete solution on mind
- This will reflect as demand on electric mobility as well as bicycles and public transportation





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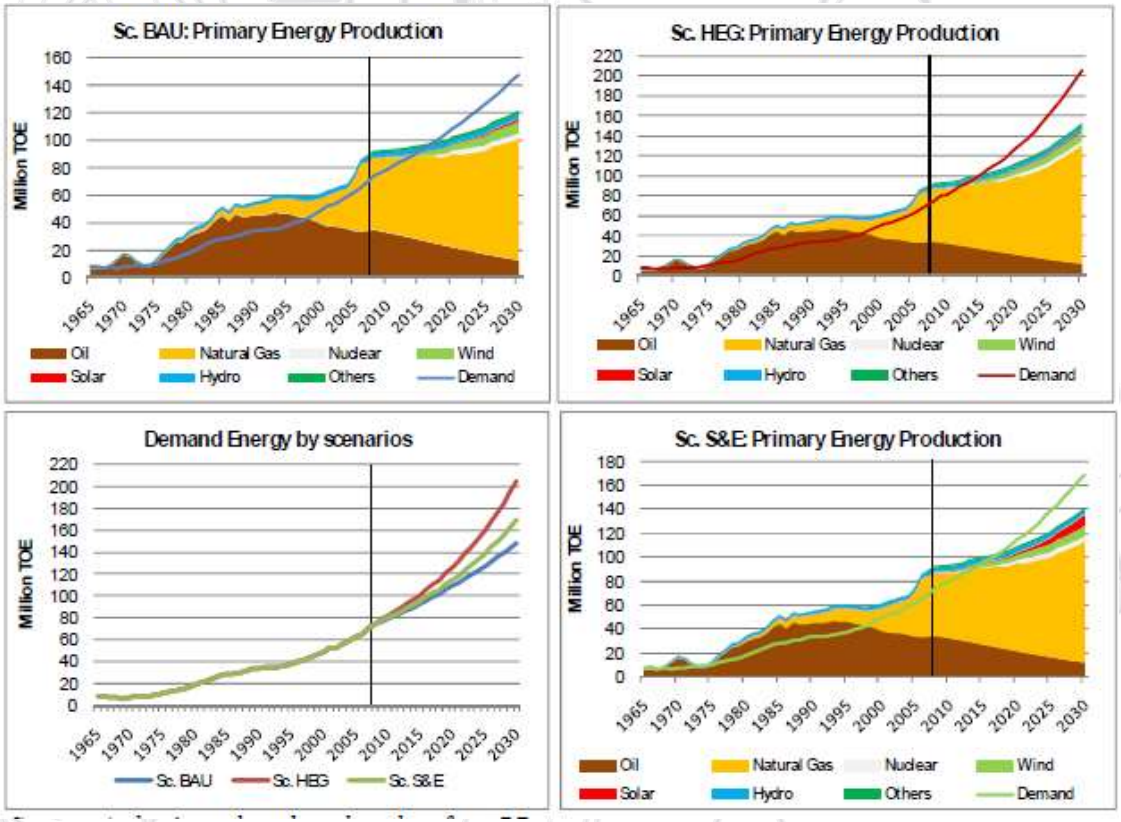
Supply Side – Demand Supply Balance

- All scenarios predict higher demand than supply to be met by imports
- Will reflect as increased pricing
- No aggressive renewable scenarios having been developed
- Scenarios project 30% of investments in electricity sector as private



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Demand Supply Balance

- Prices will continue to rise
- Look for the investment along with the reserves
- Oil for transportation is a major problem
- Renewables will be on the rise
- Natural gas will be a major player and Egypt might experience a surplus for few years
- Nuclear is not a game changer
- Net energy imports determine the price in an energy market rather than each fuel

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Energy Pricing

- Natural gas for industry will stabilize around $6 MMBTU
- Electricity is still subsidized with cost at distribution network of 1.25 EGP per kWh
- Current costs of electricity are
  - Industrial (low voltage)→ 1.25 EGP per kWh
  - Commercial → 1.4, 1.5, 1.6 EGP per kWh
  - Residential →

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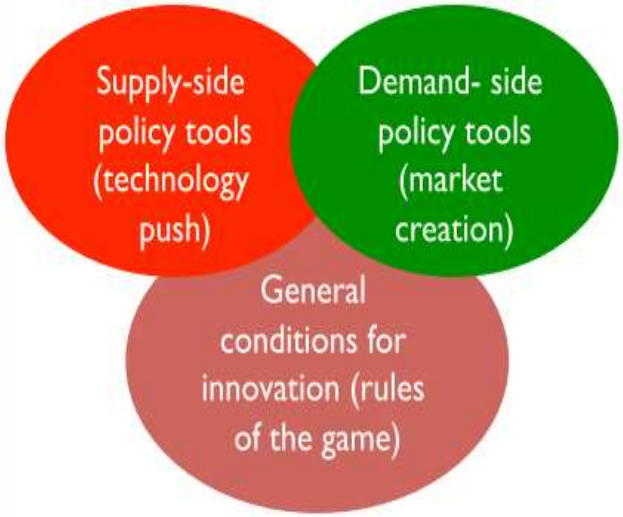
Policies

Supply-side policy tools

- Direct public funding of RD&D
- Indirect subsidies to innovators
  - production tax credits, accelerated depreciation, matching grants, loan guarantees, procurement programs, purchase guarantees, price guarantees
- Government-financed seed and venture funds
- Monetary prizes



- Education
- Immigration
- Intellectual property
- Capital market regulation

Demand-side policy tools

- Incentives for user take-up
  - feed-in tariffs, investment tax credits, rebates, concessionary financing, tax-exempt financing, matching grants, 'green certificates', etc.
- Pricing
  - externality pricing via taxes or cap-and-trade
  - price stabilization (e.g. price floors)
- Regulatory mandates
  - portfolio standards, efficiency codes and standards, BACT, etc.
- Government procurement
- Industry/market restructuring
  - Mandatory unbundling, deregulation, regulation, nationalization

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Policies – Supply Side

- Usually favor local energy industry, thus they reflect positively on local economy and job creation
- Local industry has less access to capital and less experience so usually results reflect better on smaller size system and projects
- Financing projects interventions (are more about default conditions and grace periods)
  - Guarantees
  - Favorable lending terms (Egypt GEF and EPAP III)
  - Finance without collaterals
- Obligation on increasing local component

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Policies – Rules of the Game

- Standards and codes of practice allows better market differentiation and increases consumer confidence
- Favorable customs rates and taxes (only complimentary)
- Streamlining regulations
- Direct selling to customers

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Policies – Future Trends

- Governments at declining income from export and increasingly negative trade balance remove subsides
- Governments facing growth in energy demand at above 5% must depend on private sector investments
- Governments are usually more troubled by capital investments which are usually financed by debt rather than distributed expenses
- Egypt grid requires about 70 billion USD till 2022 with only 45 billion USD planned in public investment, where the rest will come from?

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Market Sizing and Market Share

- Gives an idea about the market in terms of dollar value and/or number of units, m2, etc.
- Growth rate and trends are crucial **(9% in 2017)**
- Broken down into annual values **(2017)**
  - ✓ Technical market size (**$300 Million**)
  - ✓ Feasible market size (**$180 Million**)
  - ✓ Addressable market size (**$90 Million**)
  - ✓ Captive market size (**$6.3 Million**)

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Market Sizing and Market Share

- What are the factors that takes us from technical to feasible to addressable?
  - ✓ Technical market size ($300 Million per year)
  - ✓ Feasible market size ($180 Million per year)
  - ✓ Addressable market size ($90 Million per year)
  - ✓ Captive market size ($6.3 Million per year)
- These markets change with capacity of firms, energy prices, economic and population growth

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Market Sizing and Market Share

- Is this a high growth rate? (9% in 2017)
- What determines this growth rate?
- Is the growth rate going to increase?
- What are the factors that can drive this increase in growth rate?
- Don’t mistake market growth with your growth
- Don’t mistake market size with my markets share

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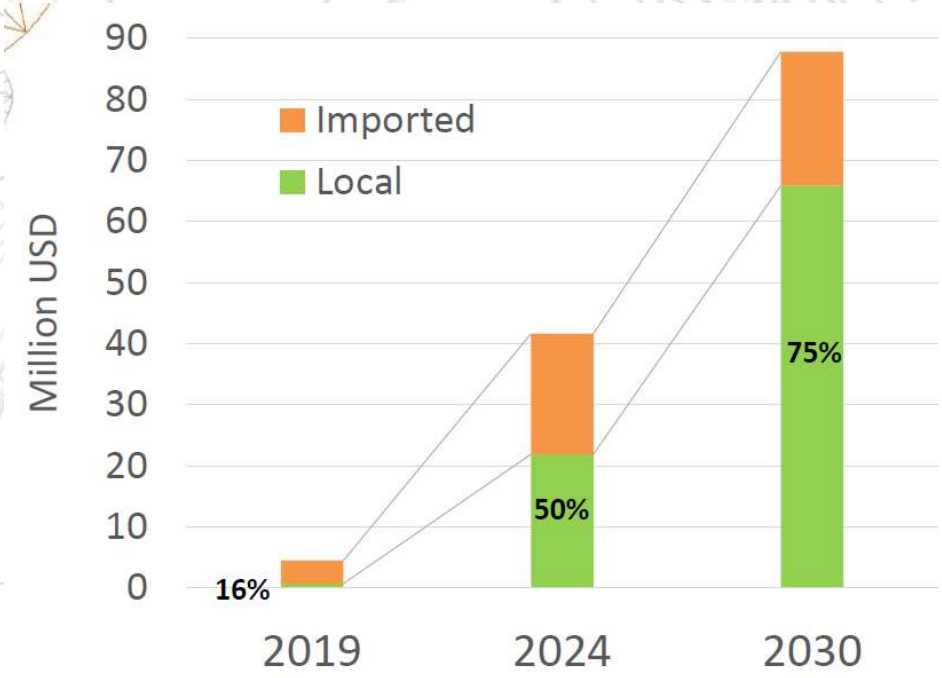
Market Sizing and Market Share

- Comes with a growth rate and trend (9% in 2017)
- Is the growth rate going to increase? What are the factors that can drive this increase in growth rate?



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Market Sizing and Market Share

- How much of the market I can capture?
- How to determine my market share?
- Many factors can determine this
  - ✓ Number of companies divided by the annual market sizes
  - ✓ Capacity of my team to implement projects
  - ✓ Cashflow to finance systems

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Market Sizing and Market Share

- 30 active companies – $6.3 Million Dollars ~ 200k USD
- 10 installers+1 Manager install 100 systems per year
- If you grow faster than your profit margin in your cash conversion cycle you will have cash flow problem
- If margin is 10% and cash conversion cycle is 2 Month, the fastest growth in 1 year is 77%
- Marketing cost per client = 1500 EGP = 100 systems needs investment of marketing 1,500,000
- You will grow by the smallest of these number

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Market Segmentation

- Market needs to be segmented since it is not a single unit
- Each segment has a size and features, it has a technology that it can serve
- I can sell to one segment well but the other not
- How to segment market?

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Market Segmentation

- Market needs to be segmented since it is not a single unit
- Each segment has a size and features, it has a technology that it can serve
- I can sell to one segment well but the other not
- How to segment market?
  - ✓ Client sector (subsector)
  - ✓ Payback/fuel type

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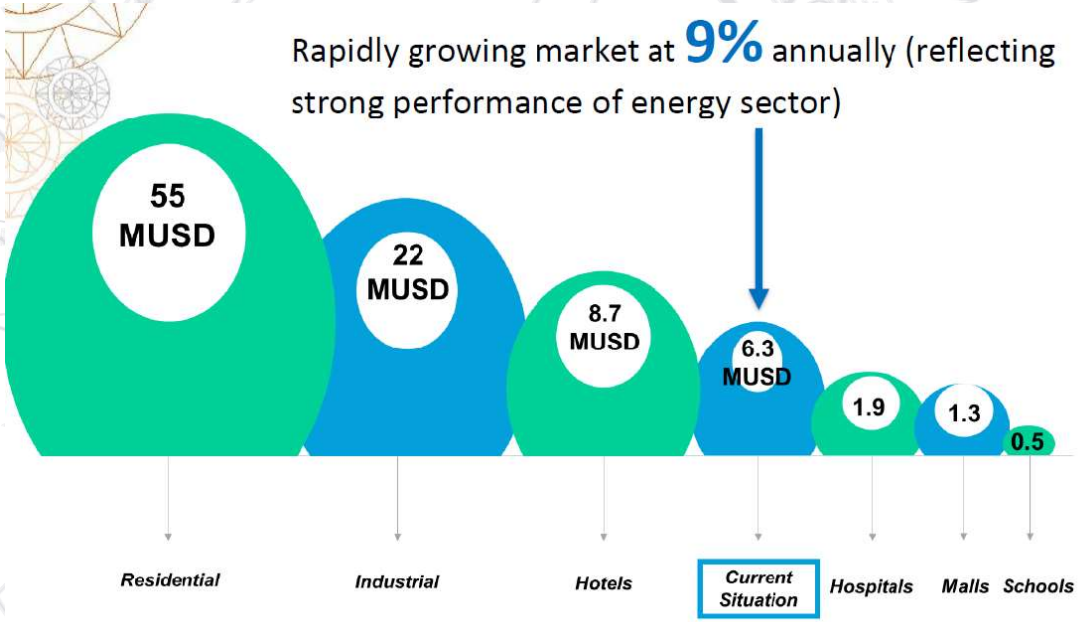
Market Segmentation – by sector



Sectors	Value (Million USD)	No of Units/Systems	Area (m^2)
Commercial	8.7	10,100	45,600
Industrial	22	580	54,750
Residential	55	40,400	182,800

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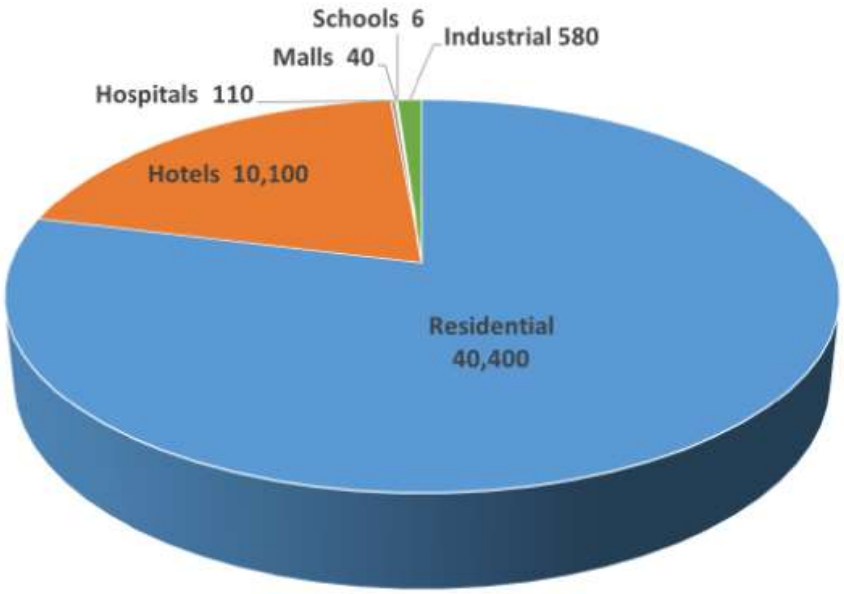
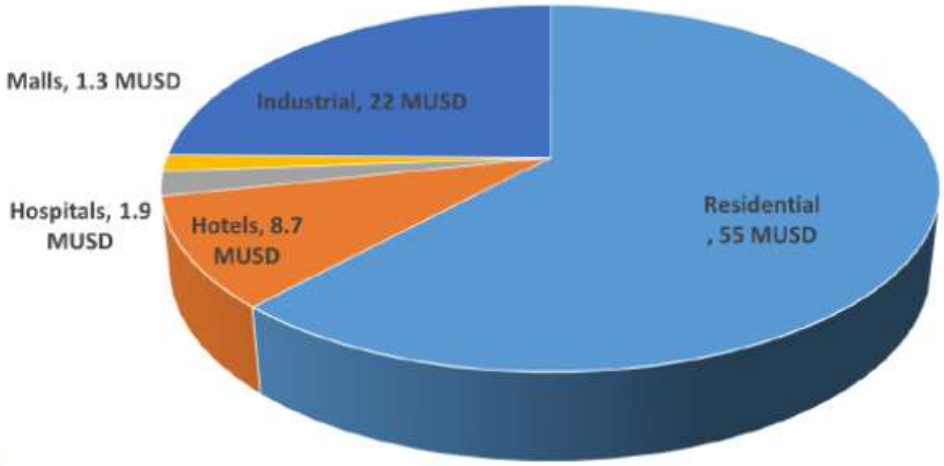
Market Segmentation – sector

- Number of clients and dollar value segmentation

50,000 units per year





90 Million USD per year (addressable market size)

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Market Segmentation - Subsector

- Subsectors can vary within a sector – commercial by type of facility

Sub-sector	Type of System	Number of units	Area (m^2)	Value Million USD
Hotels	Thermosiphon (300 lit.)	10,100	45,600	8.7
Hospitals	Thermosiphon (300 lit.)	1,410	6,330	1.9
	Forced (4 m^3)	110		2.5
Mega Malls	Forced (4 m^3)	40	3,330	1.3
Schools	Thermosiphon (300 lit.)	290	1,300	0.4
	Forced (15 m^3)	6		0.5

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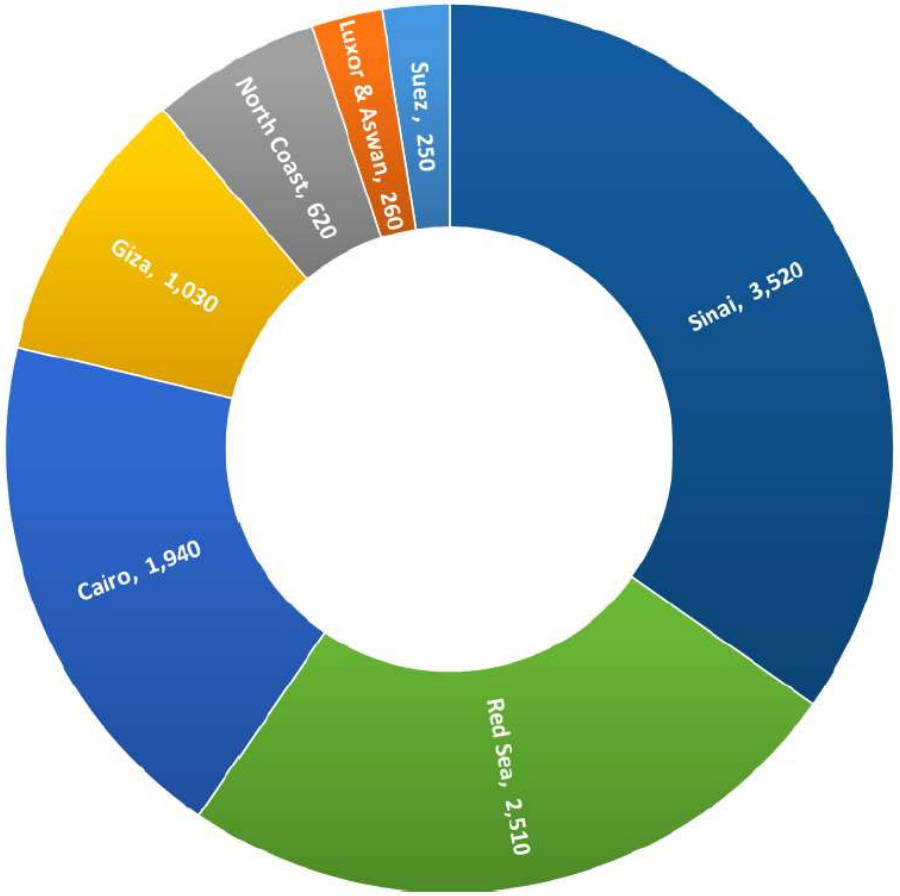
Market Segmentation - Subsector

- Even a sub-subsector could be needed



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Market Segmentation - Subsector

- You must breakdown your market targets by sector and subsector

Residential Sector (Thermosiphon)	Value (Million USD)	Number of units (300 lit)	Area (m^2)
(651 - 1000) kWh	39	28,800	129,700
(0 – 1000) kWh	16	11,600	52,100
Total	55	40,400	182,000

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Market Segmentation - Subsector

- Subsectors can vary within a sector

Industrial Sector	Value (Million USD)	Number of systems	Area (m^2)
(1 – 4) TPH	5	260	11,600
(4 – 6) TPH	4	120	10,800
(6 – 8) TPH	4	70	9,100
(8 – 12) TPH	9	130	23,250

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Market Segmentation – Feasibility

- Type of fuel decides feedback (Egypt is a fuel not energy market)
- Payback increases appetite of client to invest

Existing Heating Source	Energy Price	Simple Payback (Years)	IRR%
Diesel	7 EGP/lit	6.4	14.6%
Natural Gas	5 USD/MBTU	17.6	1.3%
	6 USD/MBTU	14.6	3.2%
Electricity	1 EGP/kWh	5.4	17.8%
	1.3 EGP/kWh	4.2	23.7%
	1.6 EGP/kWh	3.4	29.4%

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Market Segmentation – Feasibility

- Residential Houses (1.45 EGP/kWh – 1.35 EGP/kWh)
- Residential Buildings (1.45 EGP/kWh – 1.35 EGP/kWh)
- Factories (Natural gas (6.5 and 5.5 USD MMBTU and diesel)
- Hotels (1.6 EGP per kWh)

Understanding client profile can determine hit rate, ease of sales, marketing strategy and more

The firm can have multiple segments with multiple action plan

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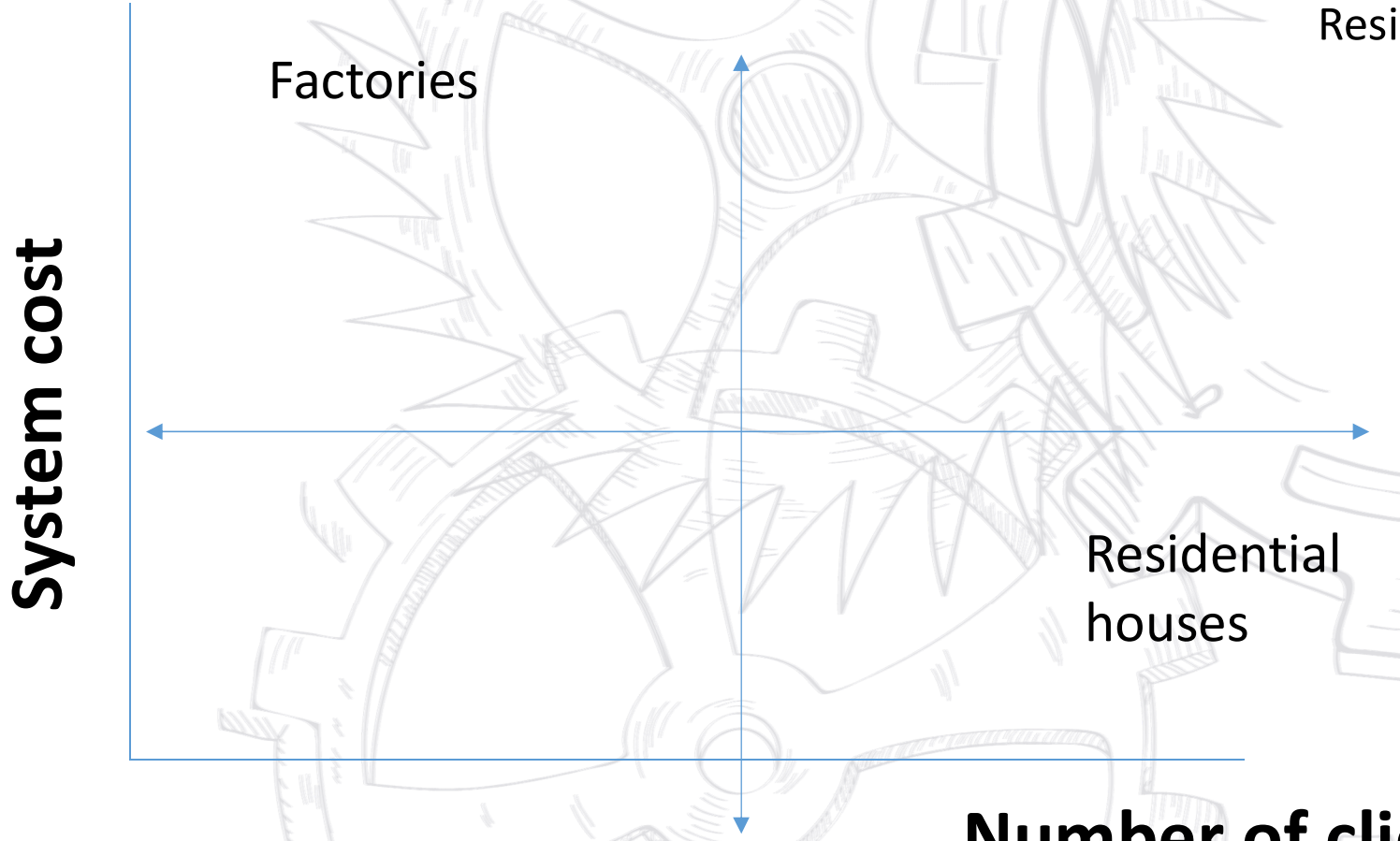
Market Segmentation – Feasibility



Residential houses
Residential Buildings
Hotels
Hotels in red sea
Energy intensive factories
Factories
Malls

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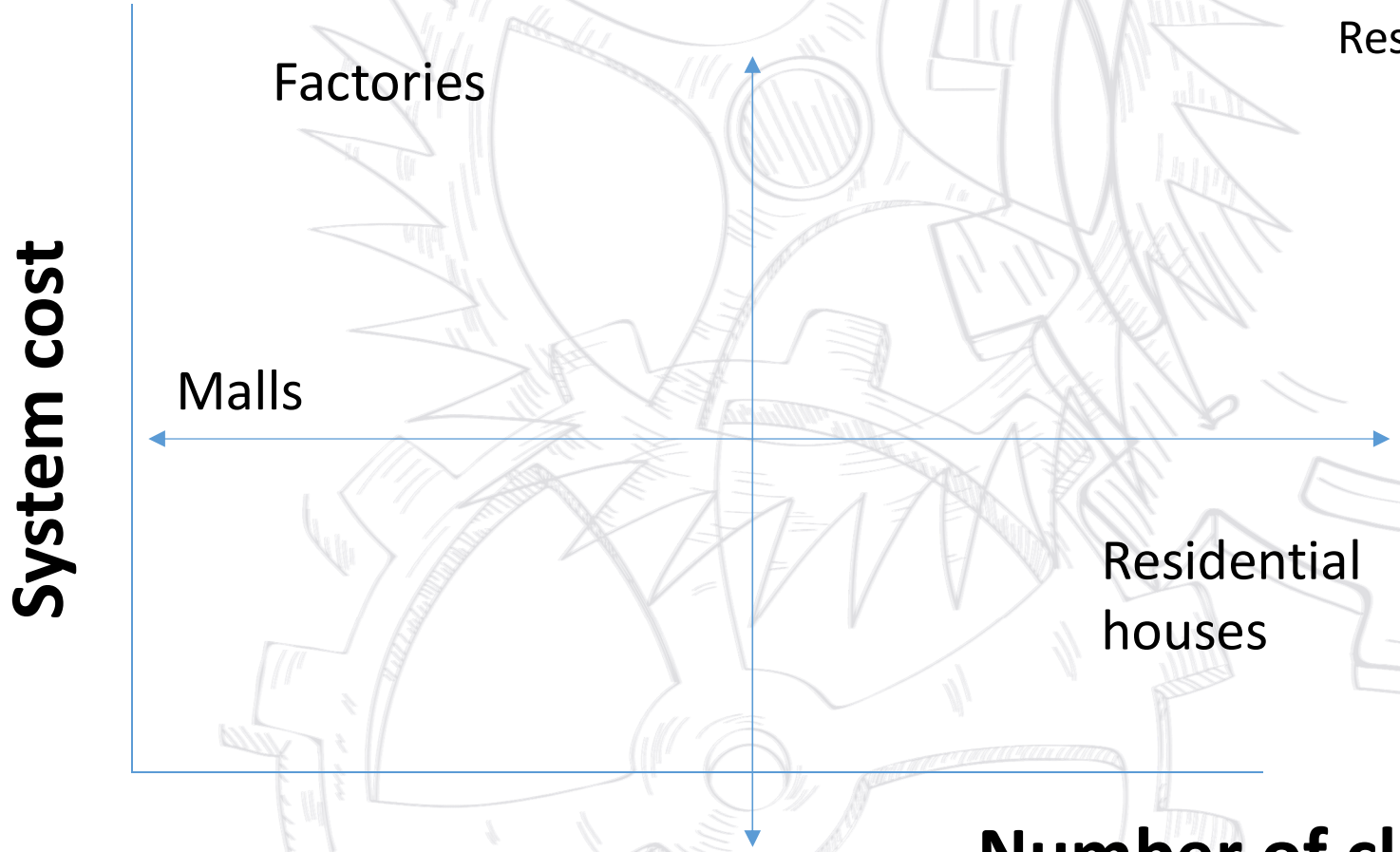
Market Segmentation – Feasibility



Residential houses
Residential Buildings
Hotels
Hotels in red sea
Energy intensive factories
Factories
Malls

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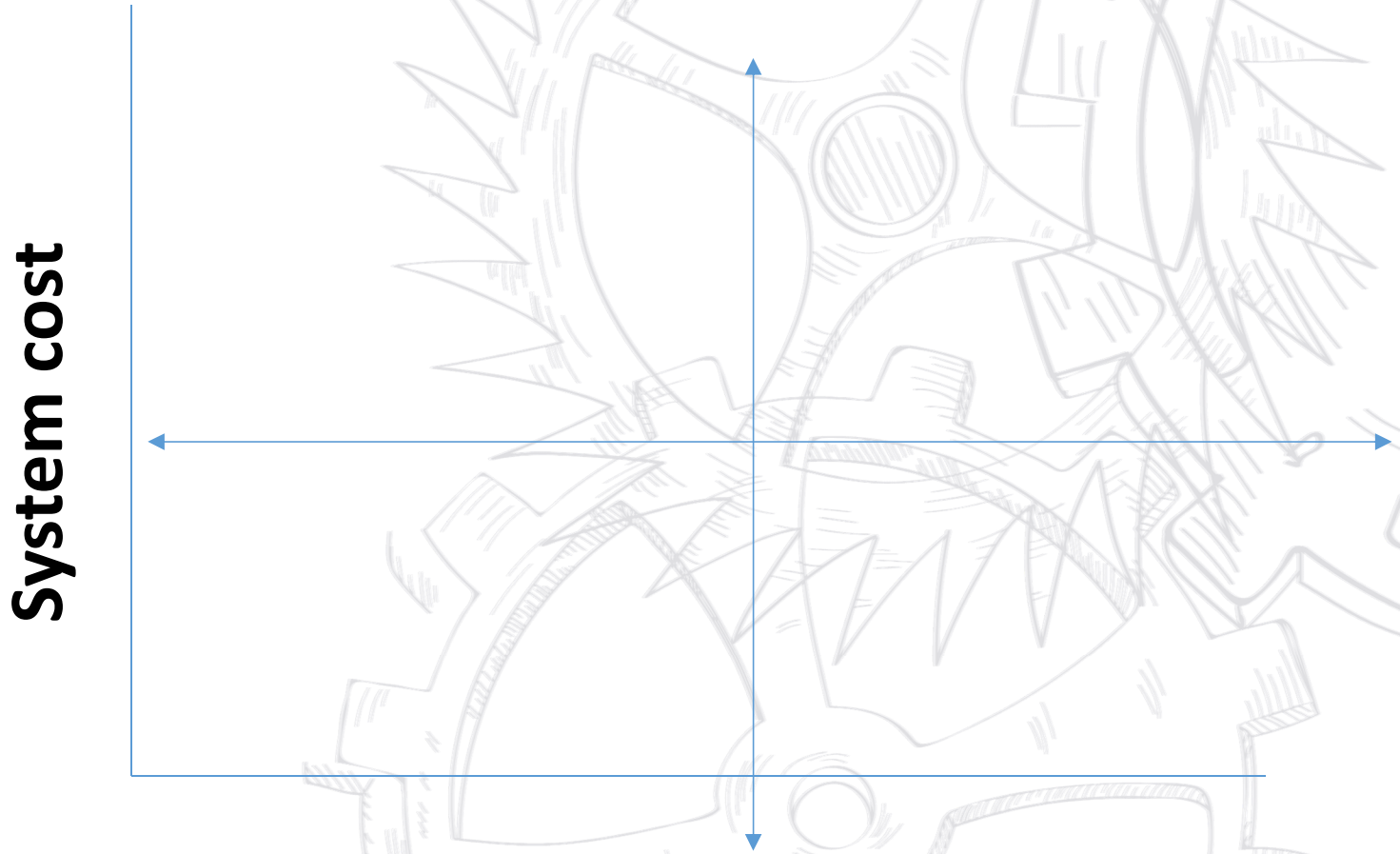
Map your client segments



My client segments

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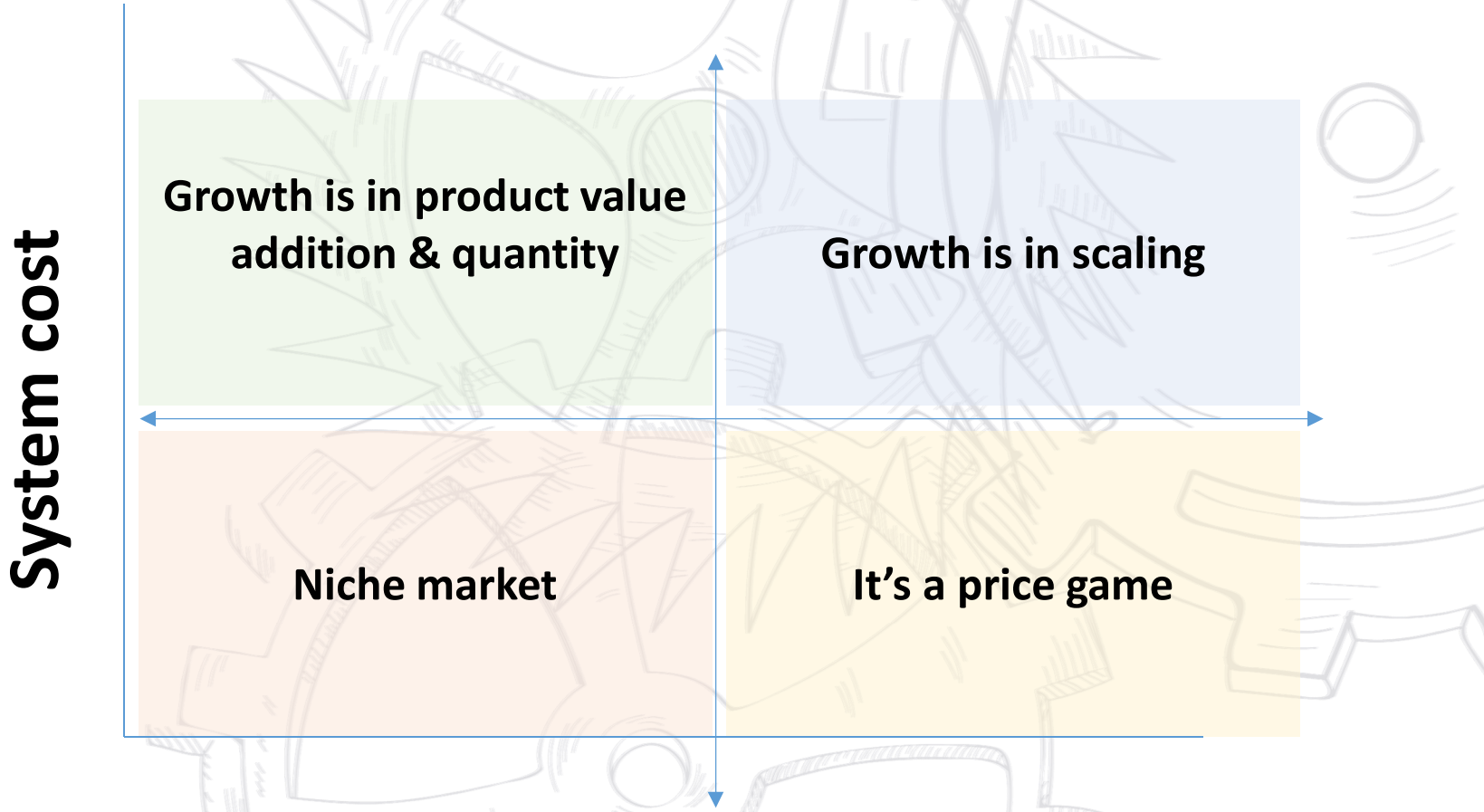
Market Segmentation – Payback



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Day 1 - Agenda

Registration and Welcome Remarks	**9.00 to 9.30**
Energy Sector Context	09.30 – 10.00
Market Analysis and Segmentation	10.00 – 10.45
Client analysis – Motives	10.45 – 11.30
Break	11.30 – 12.00
SWOT	12.00 – 12.45
Developing a client offering	12.45 – 1.30

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Motives

- Demand is on solar thermal systems (hot water) but the motives can vary
- Motives are the need that created the demand
- Clients might have the motive but not the demand
- Motives direct the client way of thinking and requirements
- Motives of client are usually not explicitly
- Motives reflect on technology, quality, pricing, after sales

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Motives

- Ease of maintenance
- Speed
- Prestige
- Practicality
- Reliability

Jeep

Toyota

Cadillac

Tesla

Fiat

Ferrari

How about solar heaters

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Motives

Industrial

Residential

Hotels

Schools Hospitals Malls

Energy security

Energy and Cost Savings

Promotional

Water needs

Awareness and Education

Energy Independence

Green Certificates

National Program

Carbon Footprint

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Demand Features and Motives

	Demand Features		
Motive	***Price***	***Quality***	***After sales***
Energy saving	Low	Moderate	Moderate
Environmental	Moderate	Low	Moderate
Promotional	Low	Low	Low
Energy Security	High	High	High
Water security	High	High	High

- Your sales and marketing must reflect different motives
- Your technology must reflect motives
- Pricing must reflect motives

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Utilizing Solar Energy for Industrial Process Heat

Motive per sector

	Demand Features		
Home on beach	***Price***	***Quality***	***After sales***
Home in compound	Low	Moderate	Moderate
Factory process heat	Moderate	Low	Moderate
Factory admin heat	Low	Low	Low
Water in desalination	High	High	High

- Mapping of motives can be detailed
- Industry by sector and geography
- Houses by geography and size

SOLAR Heating for Industrial Process
Utilizing Solar Energy for Industrial Process Heat

Motive per sector

ضخ المياه بالطاقة الشمسية الفلطوضوئية يساعدك على الري و الزيادة في قدرتك الإنتاجية الفلاحية. فمضاخات الماء

بالطاقة الشمسية هي مضخات ماء تعمل بواسطة محرك إلكتروني يستمد طاقته من آشعة الشمس المتأتية من اللوحات الشمسية الفلطوضوئية التي بدورها تقوم بجمع الأشعة الشمسية ، طاقة متجددة ، نظيفة،متوفرة و مجانية

يمكن إستعمال الضخ بالطاقة الشمسية في المواقع المتصلة بالشبكة أو المنعزلة عن الشبكة .

تضمن لكم قمكو :

- دراسة مجانية و شخصية

- تركيب عالي المهنية ضمن المواصفات العالمية

- خدمة ما بعد البيع سريعة

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Map your clients' motives – be detailed

Segment	Motive	Demand Features		
		Price	*Quality*	*After sales*

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Map your clients' motives – be detailed

Segment	Motive	Do I need to change		

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Client Profile Card

Feature	Hotels in Red Sea
Description	
Typical roof area	
Market Size	
Number of clients	
Payback	
Maintenance needs	
Purchasing power	
Profit Margins	
Motives	
Special requirements	

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Utilizing Solar Energy for Industrial Process Heat

Day 1 - Agenda

Registration and Welcome Remarks	**9.00 to 9.30**
Energy Sector Context	09.30 – 10.00
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Developing a client offering	12.45 – 1.30

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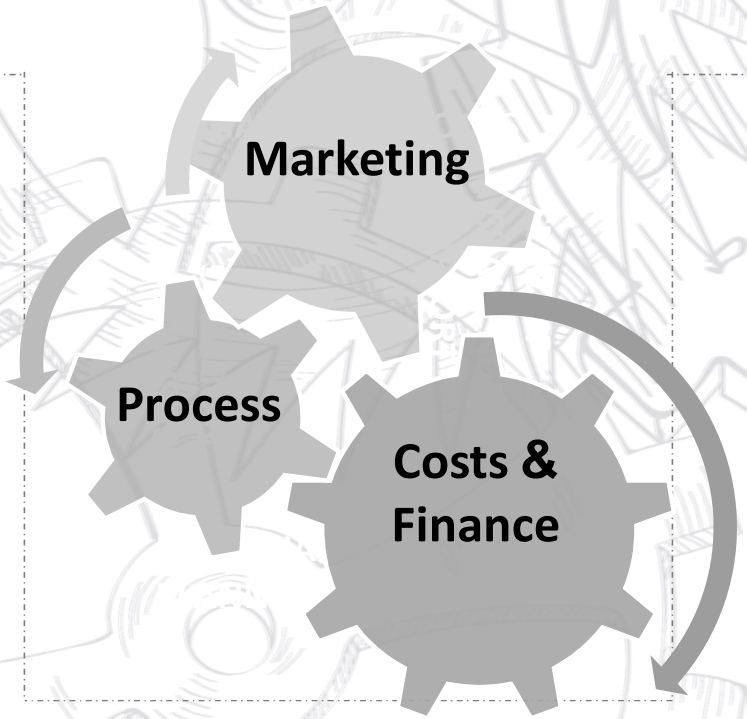
Utilizing Solar Energy for Industrial Process Heat

Workshop Flow

Building your offering

- SWOT
- Developing a client offering
- Developing your business model



Understanding the market

- Energy Sector Context
- Market Analysis and Segmentation
- Client analysis Motives

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SWOT

- Strength – Weaknesses – Opportunities – Threat
- It is a strategic analysis tool
- It allows the selection of markets, avoiding risks, capturing opportunities, building weaknesses
- It is commonly done but rarely in the right way

SWOT

- SWOT analysis can be used as a tool to articulate your company's strategic objectives.
- SWOT analysis aims to identify the key internal and external factors that are important to achieving the objectives and goals of an organization. The analysis groups key pieces of information into two main categories:

SWOT

- Internal factors – The **strengths** and **weaknesses** internal to the organization. These may be viewed as strengths or weaknesses depending upon their impact on the organization's objectives, and the ways it carries its activities. They should include, at a minimum: human resources, finance, management, relationships with subsidiaries, etc.
- External factors – The **opportunities** and **threats** presented by the external environment to the organization. These may include macroeconomic matters, technological change, legal and regulatory frameworks, and socio-cultural changes, as well as changes in the marketplace or competitive position.

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SWOT – Sample SWOT

STRENGTHS	WEAKNESSES
• Compliance to legal and administrative liabilities (Licenses, insurances, commercial register, etc..) • Fenced or broadened geographic reach/ market segments • Qualified and multidisciplinary team (Engineers, installers, marketers, sales, etc..) • Tier A with demonstrated history of projects • Innovative product or service (technology specific, aftersales services, soft payment terms, etc..) • Cost advantages through value chain (Manufacturer + Installer)	• Lack of marketing or other discipline expertise • Undifferentiated products and service (i.e. in relation to your competitors) • Poor location of your business • Weak distribution channels • Poor quality goods or services • Weak brand name and reputation in market • High cost structure • Inconsideration to legal and administrative liabilities
OPPORTUNITIES	**THREATS**
• Developing and expanding your market • Mergers, joint ventures or strategic alliances • Moving into new attractive market segments • Loosening of rules and regulations • Removal of international trade barriers • A market led by a weak competitor • Unfulfilled needs and wants • New technologies and services	• A new competitor in your home market • Price war • Competitor has a new, innovative substitute product or service • New regulations • Increased trade barriers • Taxation may be introduced on your product or service • Site accidents or penalties due to incompliance to technical, legal and administrative liabilities.

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SWOT – Interconnections

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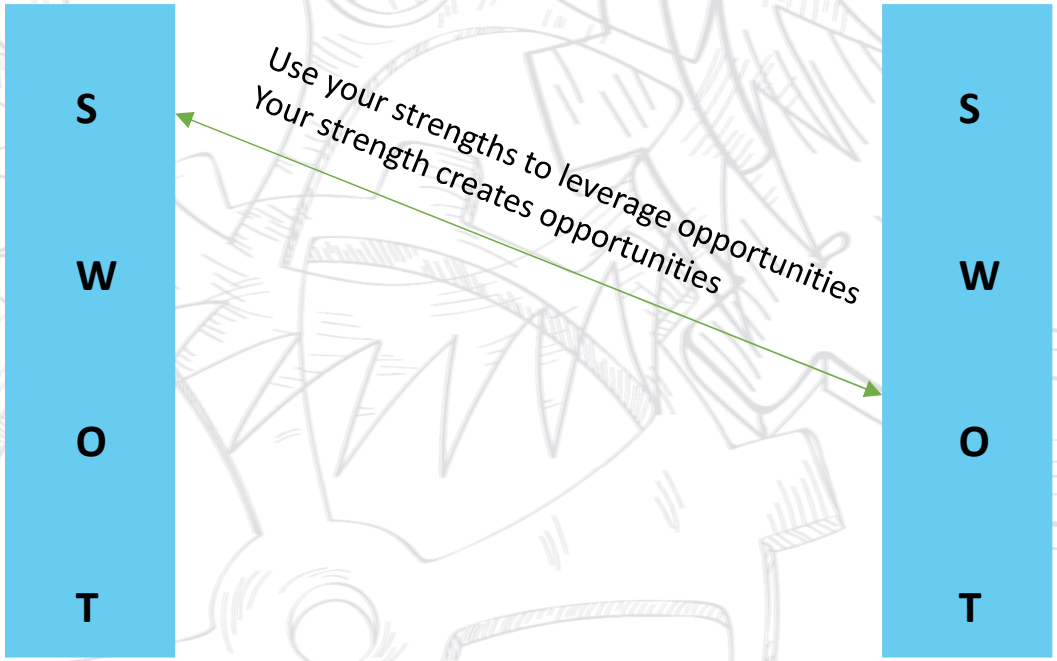
SWOT Analysis



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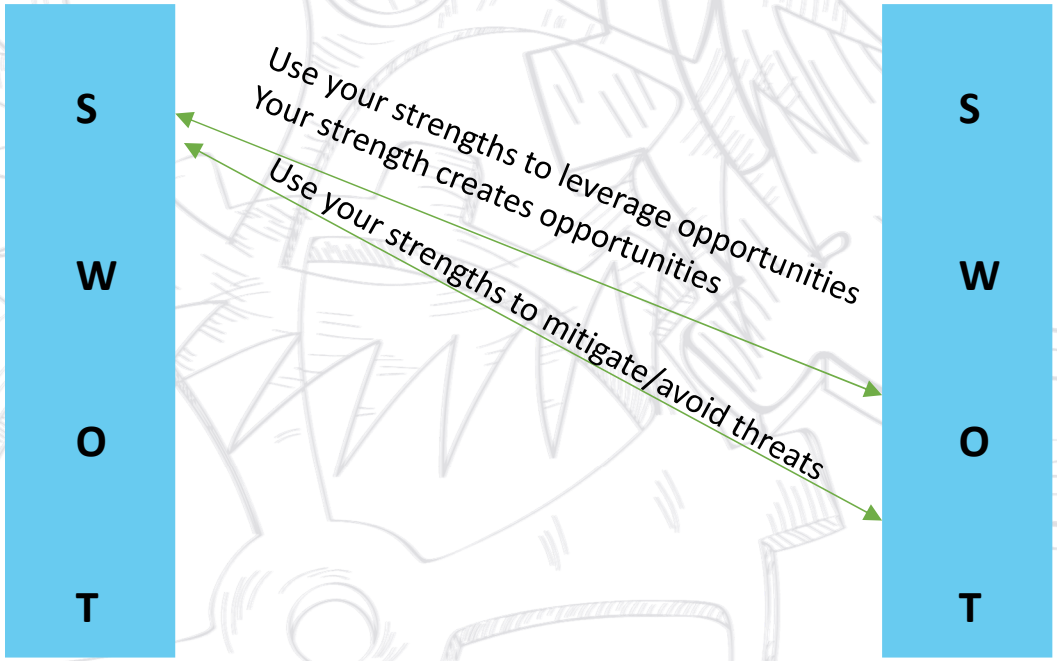
Strategic Planning Tools

Business Strategy and Keys to Success. **Strategy Tools**. Elements of Strategic Planning.

Training Slide

SWOT Analysis



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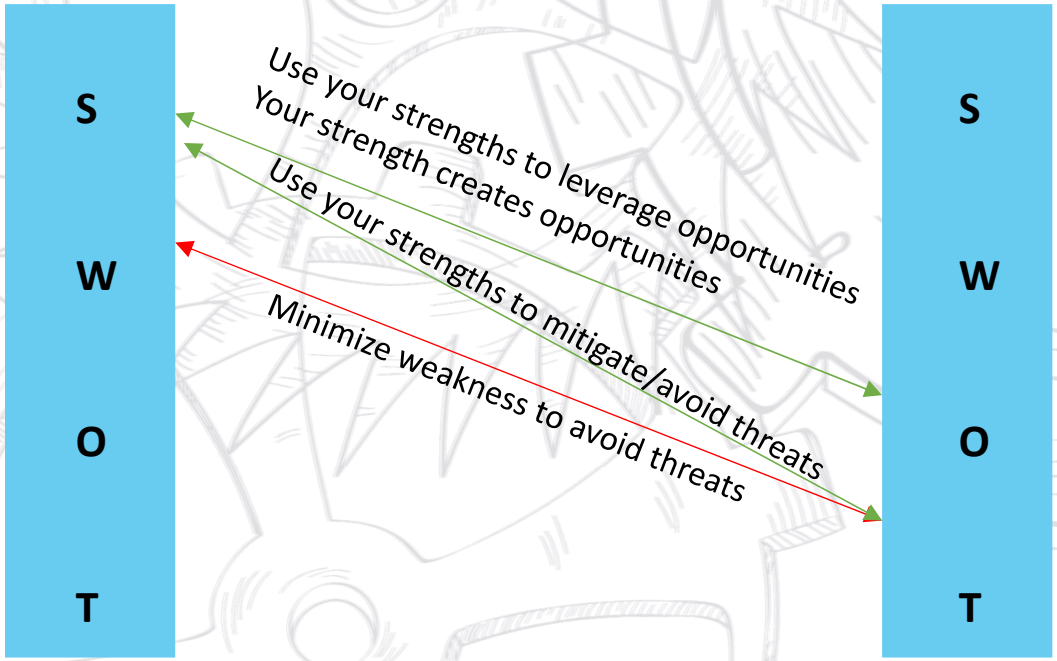

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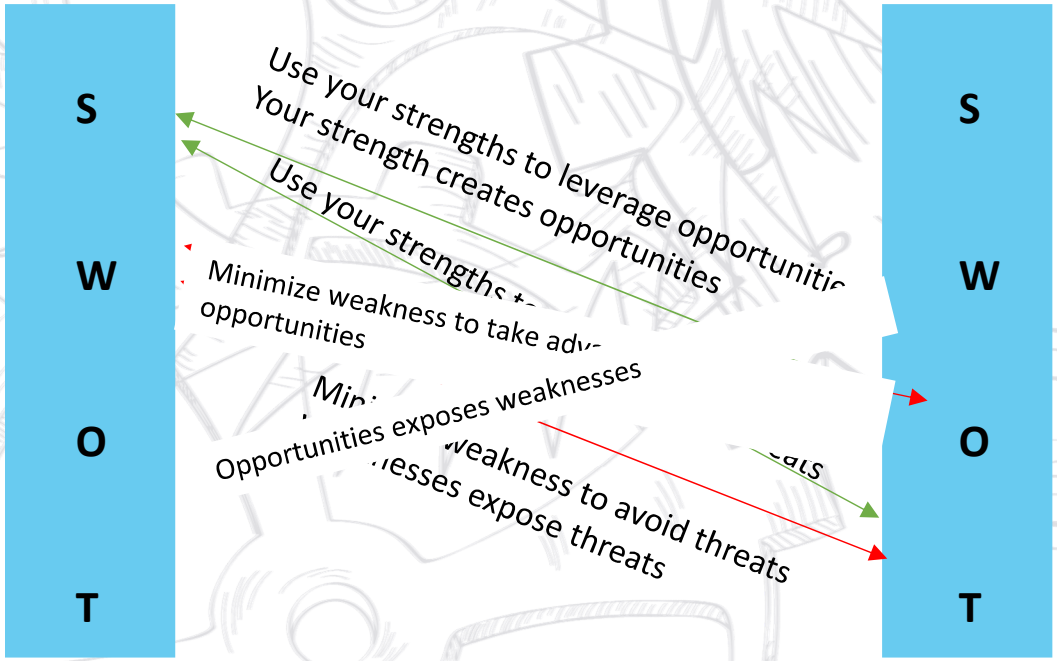

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SWOT

Must be interconnected

- **Opportunity to expand in Africa**
  - **Strength → network in Africa**
  - **Weaknesses → absence of cash to start**
  - **Threat → exchange rate challenges**

Limited quality control – cash flow challenges – limited middle management – limited contacts

Finance for clients – decrease costs of operations (speed of deployment)

SWOT

Can be market specific

- **Weakness (industry)**
  - **Absence of network**
- **Strength (in residential)**
  - **Exclusive distributor or manufacturer**

Natural gas heaters – currency exchange – inflation – low market control – etc

Decrease cost of product – expand to new markets – sell through distributors

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SWOT - interconnection – be fair

STRENGTHS (G)	WEAKNESSES
OPPORTUNITIES	**THREATS**

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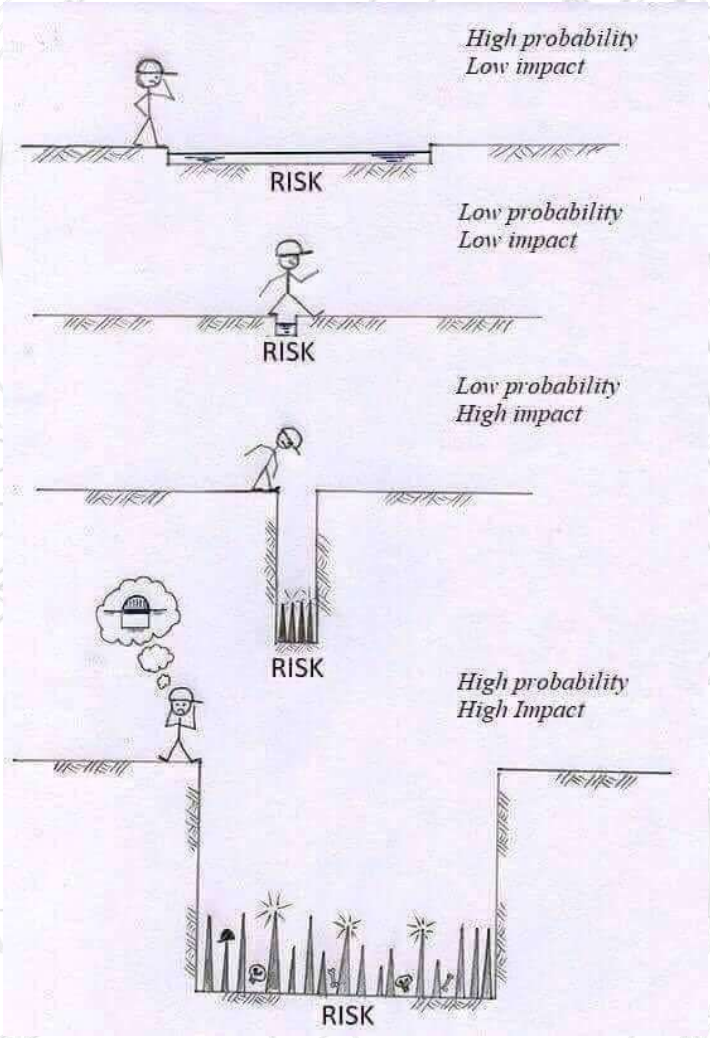
SWOT – Threats assessment



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SWOT – Analysis

STRENGTHS	WEAKNESSES Which one to build (from opportunity to capture or threats to mitigate
OPPORTUNITIES (which resources I have that allows me to capture	THREATS (Probability – Impact) Which ones to mitigate and how)

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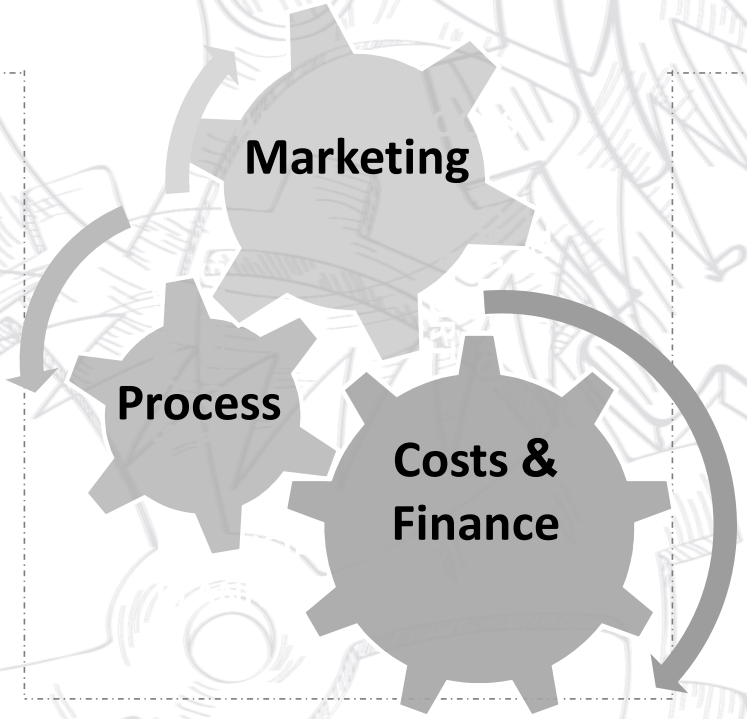

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Client offering (business solution)

- After understanding my client features
- After understanding my SWOT
- I need to develop an offering that matches the above
- What is an offering? Aren't we all selling solar thermal heating systems?

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Client offering (business solution)

- Offering is more complex than a product
- Offering consists of a group of product**S** (solar thermal coupled with electric heater) and **services** (maintenance) or utility (water/energy)
- Can I offer coupled products (integrated solutions)
- What services my client needs? Should offer them alone or bundled with a product?

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Client offering (business solution)

Selling Product vs Service vs Energy/water

- Do I have the choice or is it decided by the solution?

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Client offering (business solution)

Selling Product vs Service vs Energy/water

- Do I have the choice or is it decided by the solution?

Solar water heater

Maintenance and rehabilitation

Desalinated water

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Client offering (business solution)

Selling Product vs Service vs Energy

- If you're selling a product…
  - The price is decided as a balance between supply and demand (open market)
  - There's a trade off between price and quality
- If you're selling services
  - Easy to expand
  - Hard to price
- If you're selling energy…
  - Regulated prices
  - You're thinking about the replacement

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Client offering (business solution)

Selling **Product** vs **Service** vs **Energy**

Solar Irrigation Pumps

PV Panels

Shredding system

Biogas Units

Biodiesel technology

Example: Selling PV systems

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Client offering (business solution)

Selling Product vs Service vs Energy

Example: Energy efficiency consultancy for Factories

Renting Solar Irrigation Pumps

Consultation/integration services

Waste collection, sorting, compression

Designing and maintaining the units

Consultation/implementation

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Client offering (business solution)

Selling Product vs Service vs Energy

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Example: Selling Biodiesel

Energy

Electricity

RDF

Methane

Biodiesel

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Client offering (business solution)

Affect costs and competitiveness

Solar Irrigation Pumps
- ✓ Fast Cash Recovery
- ▪ Less clients

PV Panels

Shredding system

Biogas Units

Biodiesel technology
- ✓ Easy licensing
- ▪ Complicated logistics

Renting Solar Irrigation Pumps

Consultation/integration services

Waste collection, sorting, compression

Designing and maintaining the units

Consultation/implementation
- ✓ Low overheads
- ▪ Barrier to entry

Energy

Electricity

RDF

Methane

Biodiesel
- ✓ Bigger market
- ▪ Complications in licensing

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Client motives – Opportunities and Strengths

- Products

- Services

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Client offering – Products and/or services

- Solar heating + PV
- Solar heating + gas boiler
- Solar heating + Biogas
- Operation
- Maintenance
- Consulting
- Training

- After sales
- Selling desal water
- Selling hot water
- Selling steam
- *Support in finance*
- *Access to finance*

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Client offering – Products and/or services – Client segment

	Know how	Market share	Impact on client	Resources	Margin	Market share
Solar heater	☺	😐	☹	☺	😐	☹
SWH + Boiler						
O&M						
SWH + O&M						
Selling desal wat						
SWH + After sales	☺	☺	☺	😐	☺	😐
SWH + Finance	☺	☺	☺	☹	☺	☺

Available - can be acquired – can't be aquired

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Workshop Flow

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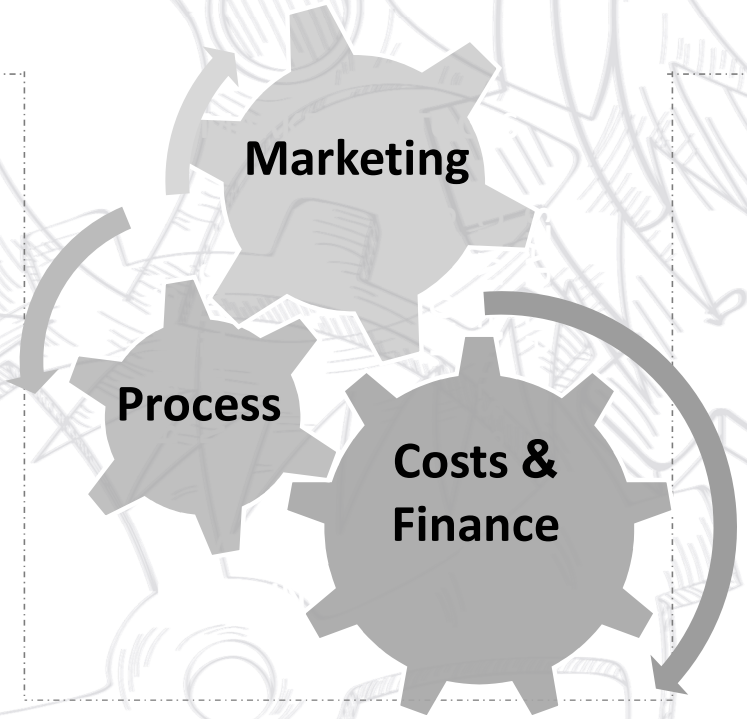

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SOLAR Heating
for Industrial Process
Together Toward Efficient Production

Business Development and Growth Management for Solar Thermal Markets

Business Development – Day 2

January 14th , 2020

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Introduction

- The training is designed for senior firm members and middle management
- It aims at helping the firm increase the effectiveness of it marketing and sales, improve the business model and operations, as well as determine the costs, pricing and means to access finance
- The training is highly interactive and will allow attendees to determine all the above for their firm during the training.

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Utilizing Solar Energy for Industrial Process Heat

Day 2

- Develop the business model of the firm including how the business process is organized
- Outline marketing plan and manage sales

Registration and Welcome Remarks	09.00 to 9.30
Review and reflections	09.30 – 10.00
Developing your business model	10.00 – 10 5
Developing your business process	10 5 – 11.30
Marketing Strategy	11.30 – 12.00
Marketing Plan	12.00 – 12 5
Managing you marketing and sales	12 5 – 13.30

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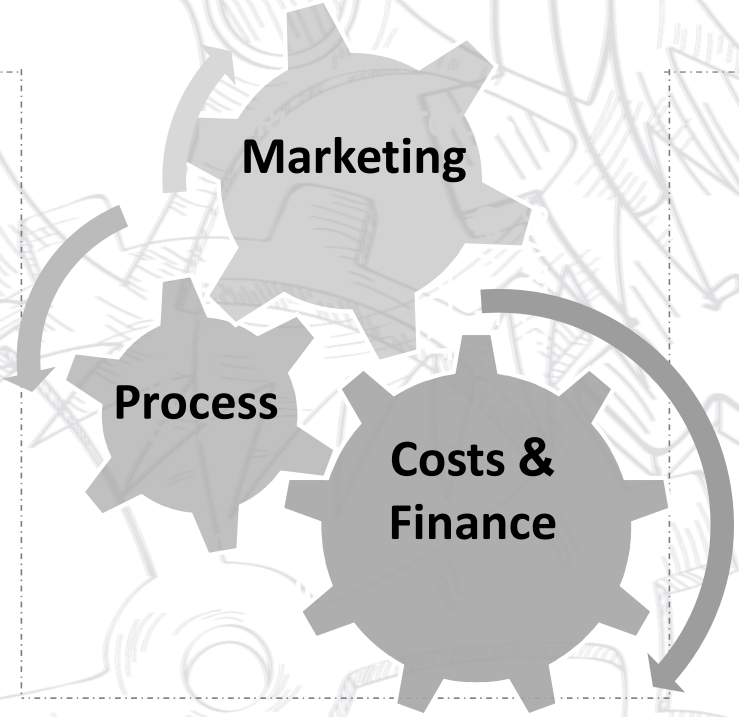

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Competitiveness Porter Five Forces

- In practice, there are many features of an industry that determine the intensity of competition and the level of profitability.
- A helpful, widely used framework for classifying and analyzing these factors was developed by Michael Porter of Harvard Business School.
- **Porter's Five Forces of Competition framework** views the profitability of an industry as determined by five sources of competitive pressure.

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Competitiveness Porter Five Forces

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with alternative	margins	resources	Client segment or business model
					2	5	Supply and tech support residential
					5	3	EPC industrial

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with alternative	margins	resources	Client segment or business model

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Competition from Substitutes

- The price customers are willing to pay for a product depends partially on the availability of alternative products.
- The absence of close alternatives for a product (e.g. petrol or cigarettes) means that consumers are relatively insensitive to price.
- The existence of close alternatives for a product (e.g. train or airline tickets) means that consumers are relatively sensitive to price changes.
- Internet-based alternatives have created competition that proved to be very harmful for several established industries (e.g. for travel agencies, newspapers, and telecom providers).

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with substitutes	margins	resources	Client segment or business model
				5	2	5	Supply and tech support residential
				3	5	3	EPC industrial

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Competition from entrants

- An industry that enjoys high returns on capital will attract many firms from outside the industry.
- If the entry of new firms is unrestricted, the business' profits will decline toward its competitive level.
- Barriers to entry can affect the profitability of a business. For example, an experienced psychotherapist could earn much less than an entry level doctor because psychotherapists could easily obtain their accreditation and licensing verses doctors, so the barrier to entering the market is lower.

Competition from entrants

- Bakeries had high rate of new entrants in the 1990s in the USA reducing margins.

Psychiatrics less than doctors due to more barriers to entry for doctors

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with substitutes	margins	resources	Client segment or business model
				5	2	5	Supply and tech support residential
				3	5	3	EPC industrial

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COMPETITION FROM ESTABLISHED RIVALS

- For most industries, the major determinant of the main competition and the business' profitability is the competition between the players in the respective industry.
- In some industries, firms compete so aggressively that the prices are driven down below cost and that negatively impacts the industry as a whole.
- In other industries, price competition is subtle and the competing businesses focus on non-price aspects (e.g. brand and product innovation).
- Factors include (focus, diversity of suppliers, distinction of products, production over capacity, exist strategies, economic arguments)

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with substitutes	margins	resources	Client segment or business model
		3	3	5	2	5	Supply and tech support residential
		5	4	3	5	3	EPC industrial

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BARGAINING POWER OF BUYERS

- The firms in an industry operate in two types of markets: input and output markets.
- Input markets → firms purchase physical resources (e.g. raw materials, components etc), information resources, capital and labor services.
- Output markets → firms sell their goods and services to customers (who may be distributors, consumers, or other manufacturers).
- The strength of the bargaining power of buyers depends on their price sensitivity and relative bargaining power.
- Transactions on both input and output markets create value for both buyers and sellers. Their relative economic power reflects how the value created is shared between them.

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Bargaining Power of Suppliers

- Because raw materials, semi-finished products, and components are often commodities supplied by small companies to large manufacturing companies, their suppliers usually lack bargaining power.
- Conversely, the suppliers of complex, technically sophisticated components may be able to exert considerable bargaining paper.
- The dismal profitability of the personal computer industry may be attributed to the power exercised by the suppliers of key components (processors, disk drives, LCD screens) and the dominant supplier of operating systems (Microsoft)

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Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with substitutes	margins	resources	Client segment or business model
5	4	3	3	5	2	5	Supply and tech support residential
3	5	5	4	3	5	3	EPC industrial

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Competitiveness

Power of buyers	Power of supplier	Competition with entrants	Existing competition	Competition with substitutes	margins	resources	Client segment or business model
							Manufacturing
							Distribution
							EPC
							Distribution + EPC
							Manufacture + EPC
							Distribution + Tech support
							Indirect sales

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Developing your business model

- The business model presents how are you going to deliver your solution to your client
- Discusses how you interact with suppliers and client
- Discusses your expenses and revenues
- Explains your relationship with customer and partners
- It is the outline of how you operate
- Now think of your offering and start shaping your business model

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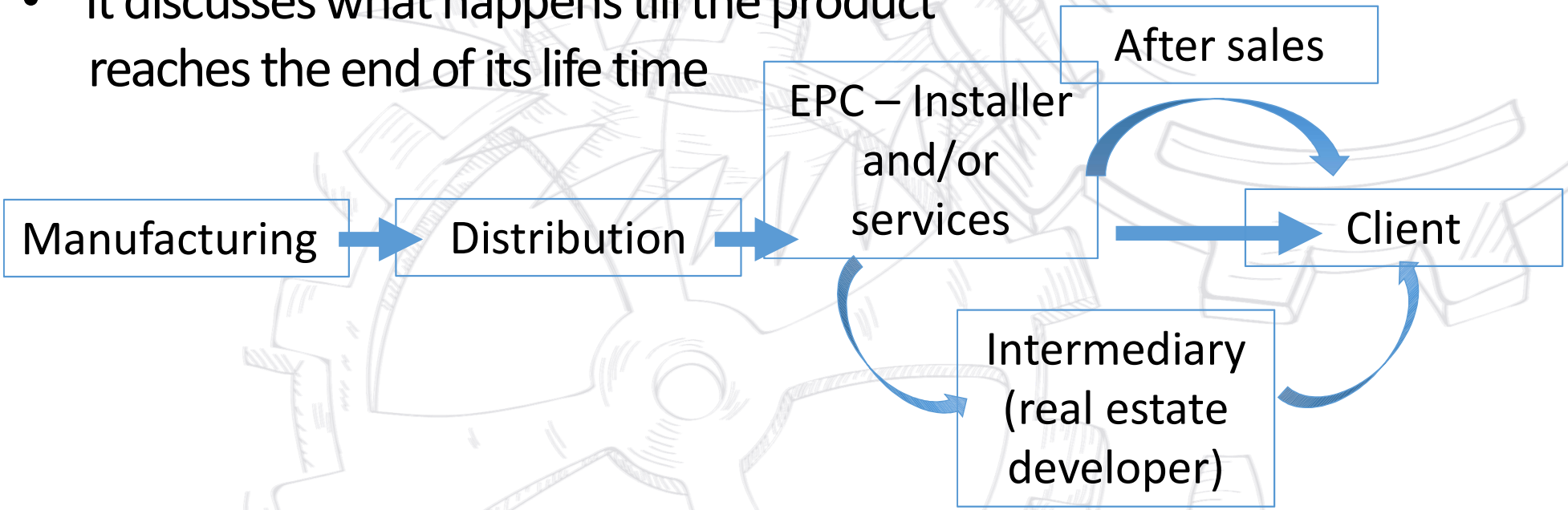
Business Model – How to deliver product → value chain

- Every sector has a value chain
- The value chain explains how raw material progress to become a product and eventually reach the client
- It discusses what happens till the product reaches the end of its life time



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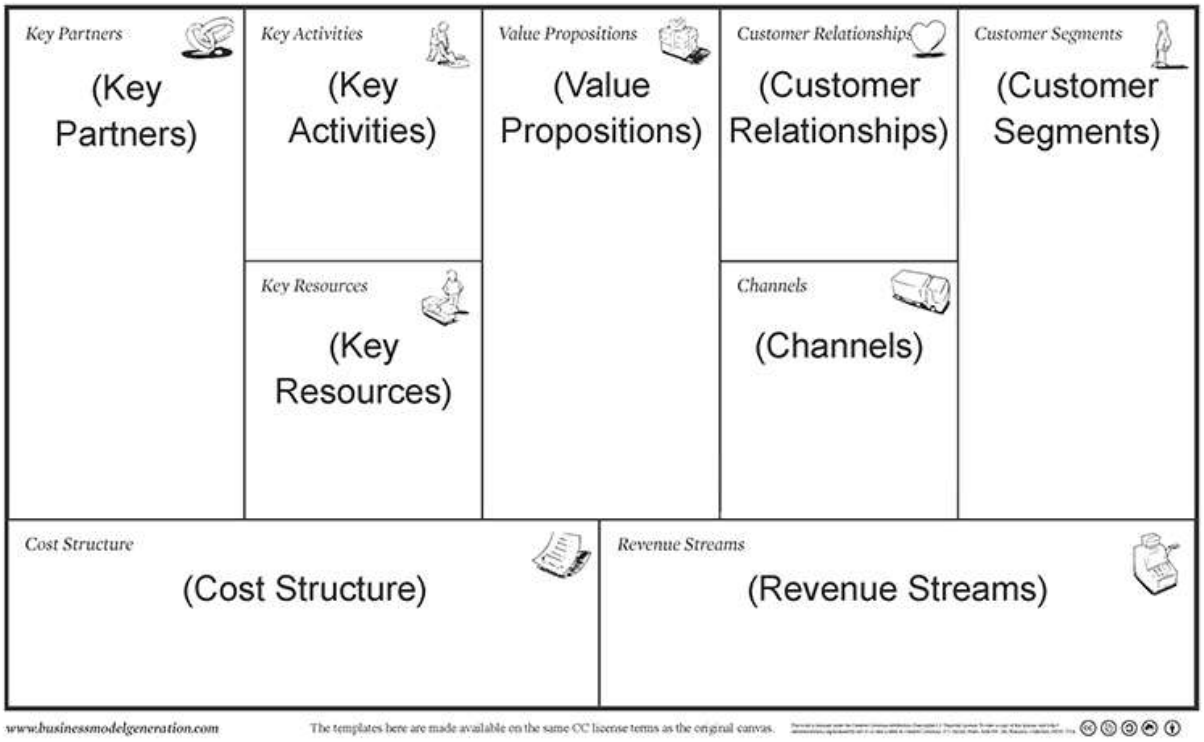
Business Model

- There are other elements but these are the key one
- All elements are interconnected
- They key is the value proposition that connect solution to client



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Business Model

- This model was designed by a Swiss entrepreneur and a researcher in 2009
- Gathers in an interactive manner all the previous elements
- It evolves during the firm lifetime
- Good starting point but details are more complex

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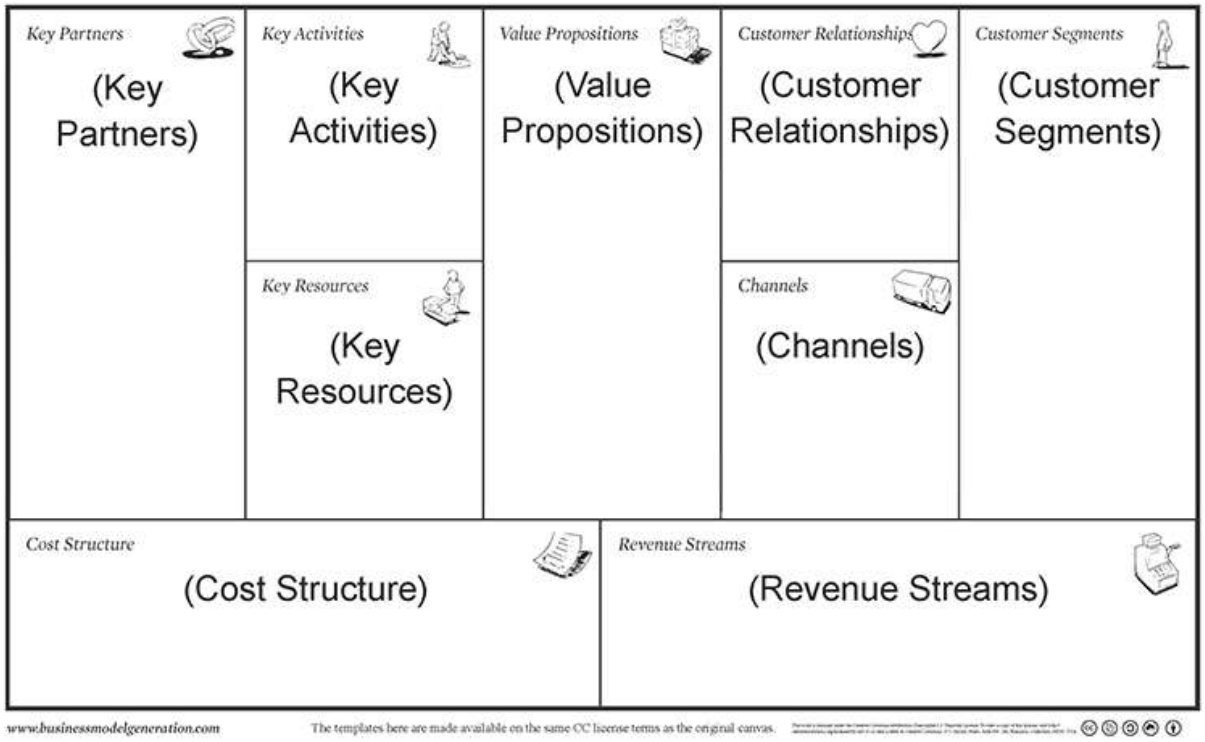
Business Model

- Do you see what binds its elements



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Coca Cola Canvas

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
(Key Partners)	(Key Activities)	(Value Propositions)	(Customer Relationships)	(Customer Segments)
Packaging firm, distribution centers	**Packaging, distribution, production, supply**	**Winning product – guaranteed sales**	**Agents, fridges, ads**	**Large malls, shops, resturants**
	Key Resources		Channels	
	(Key Resources)		(Channels)	
	Secret recipe, packaging plant, bottles, bottling factory		**Wide scale distribution**	

Cost Structure	Revenue Streams
(Cost Structure)	(Revenue Streams)
Bottling, production, marketing	**Bulk sales, piece wise sales**

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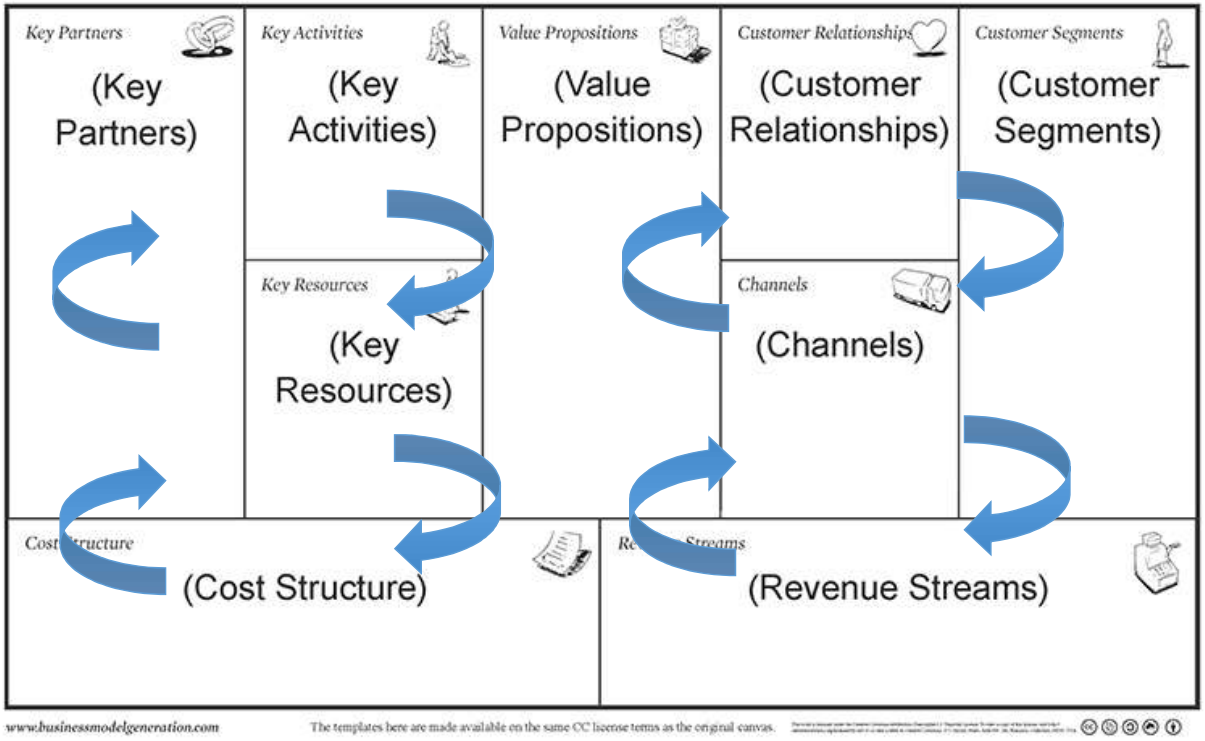
Business Model

- Do you see what binds its elements



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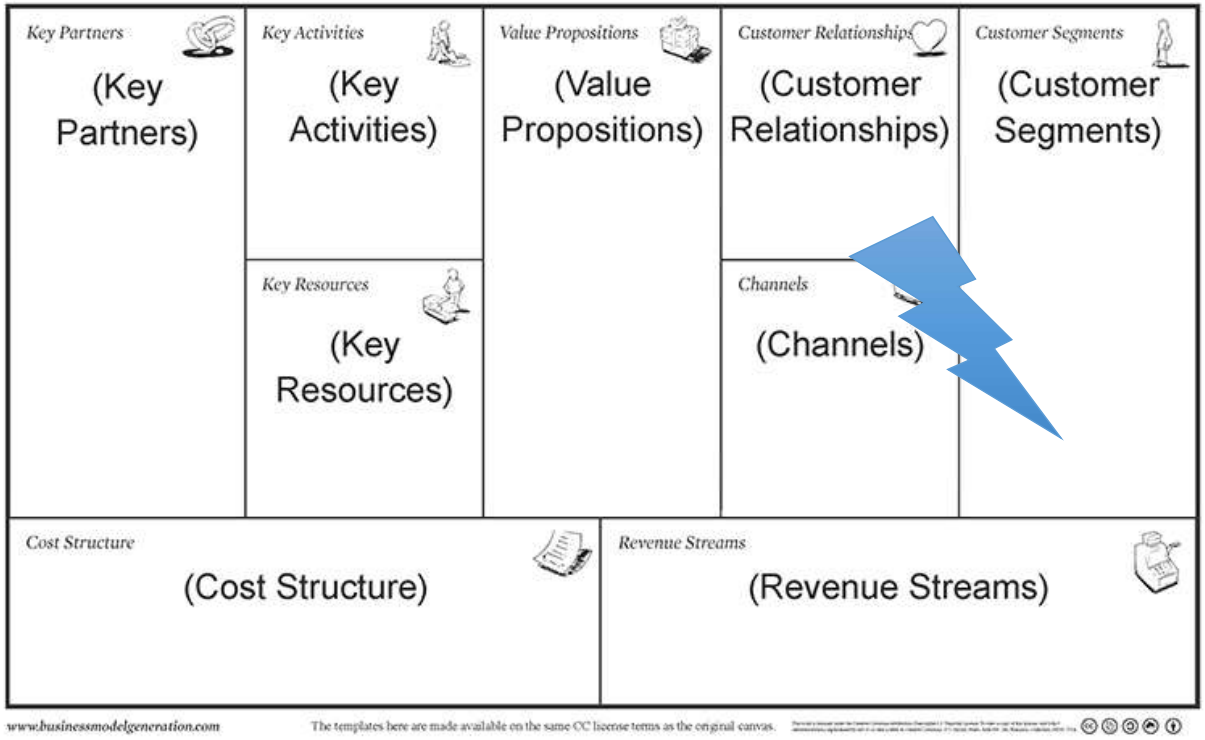
Business Model

- Market



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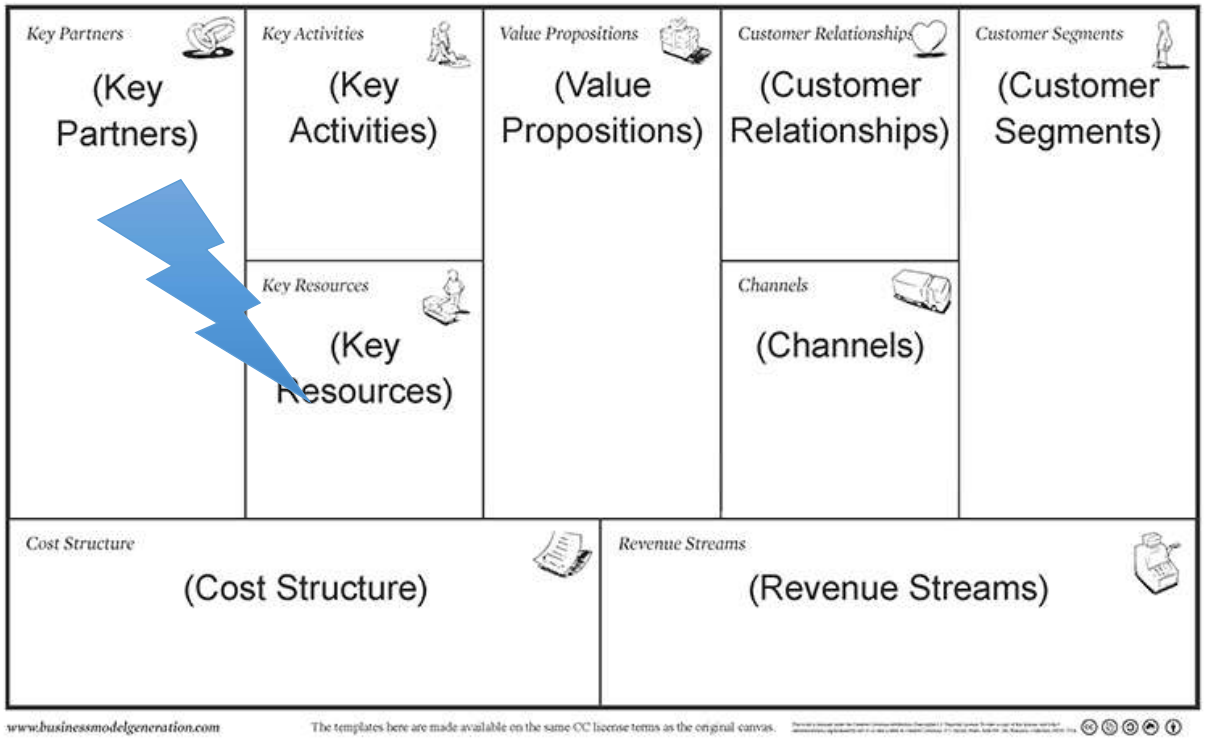
Business Model

- Supply



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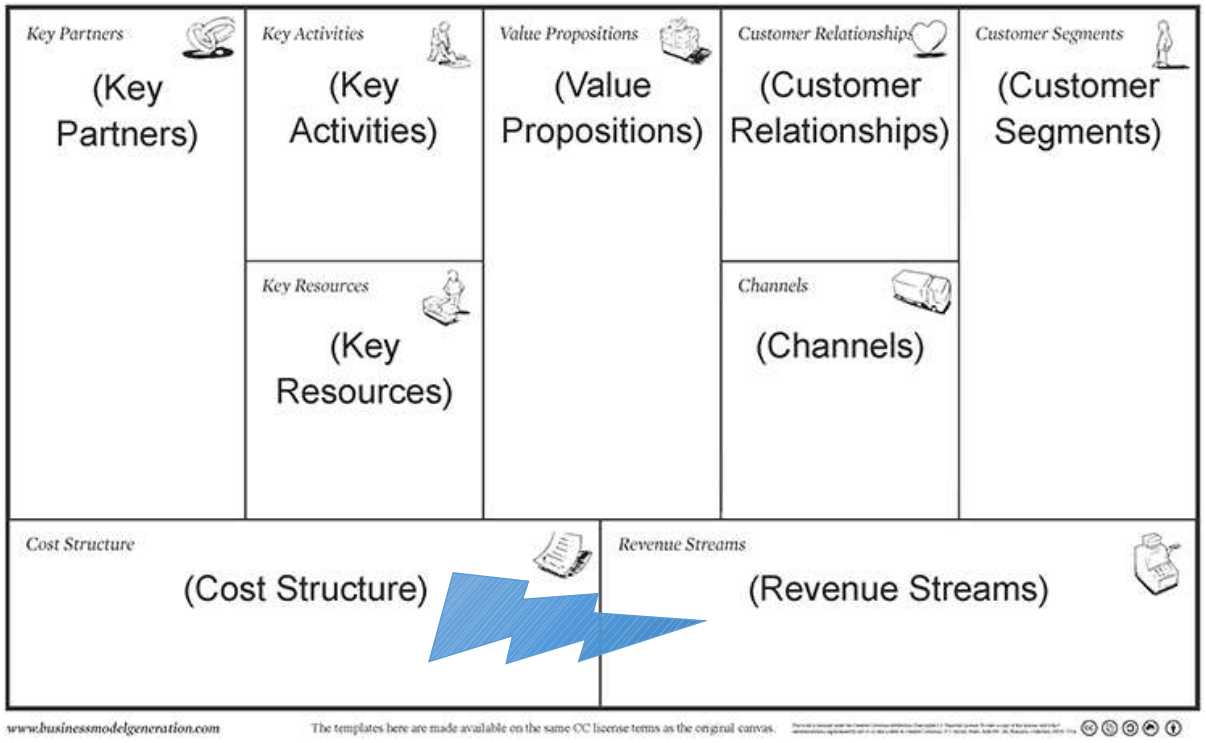
Business Model

- Financial



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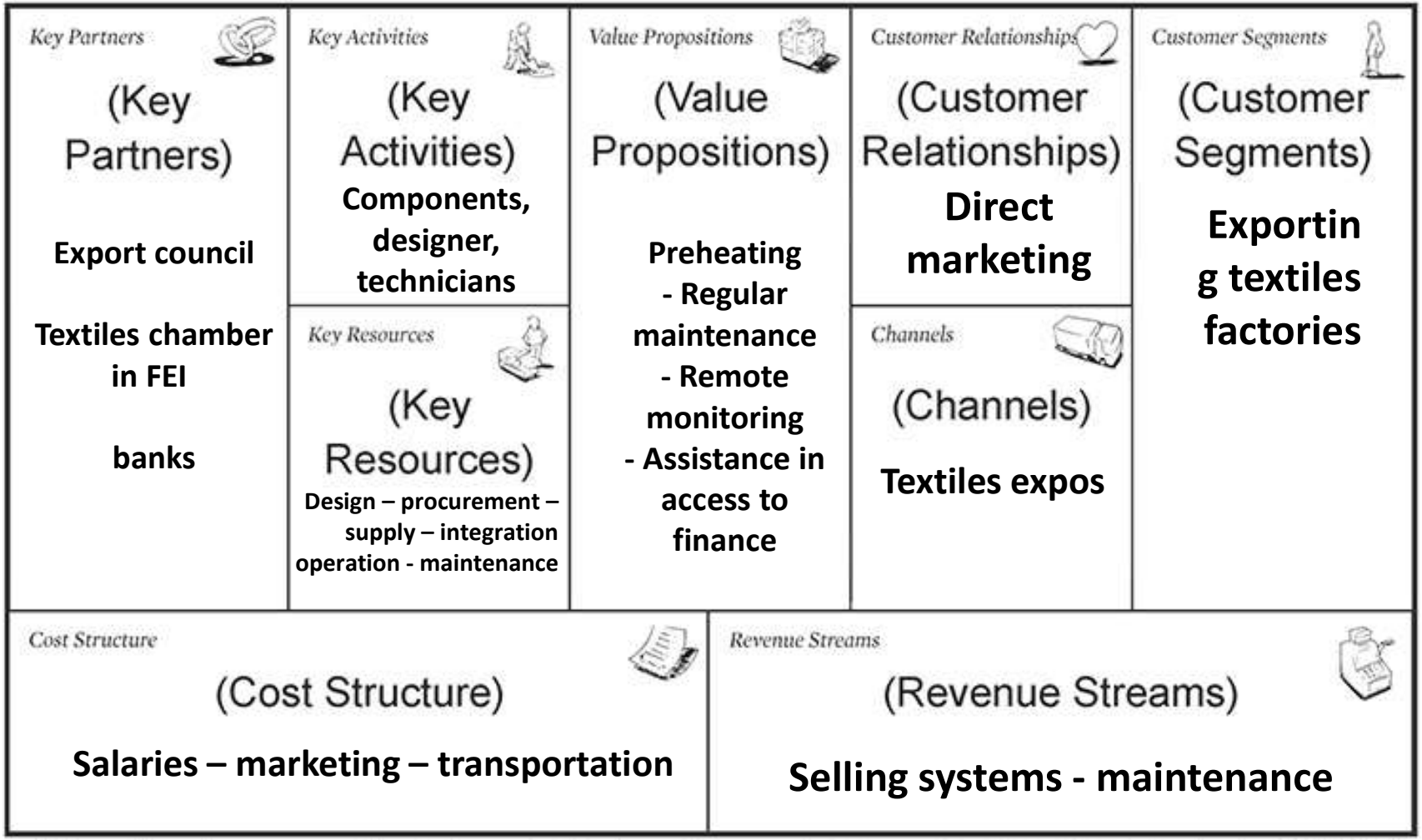
Where are you in the value chain



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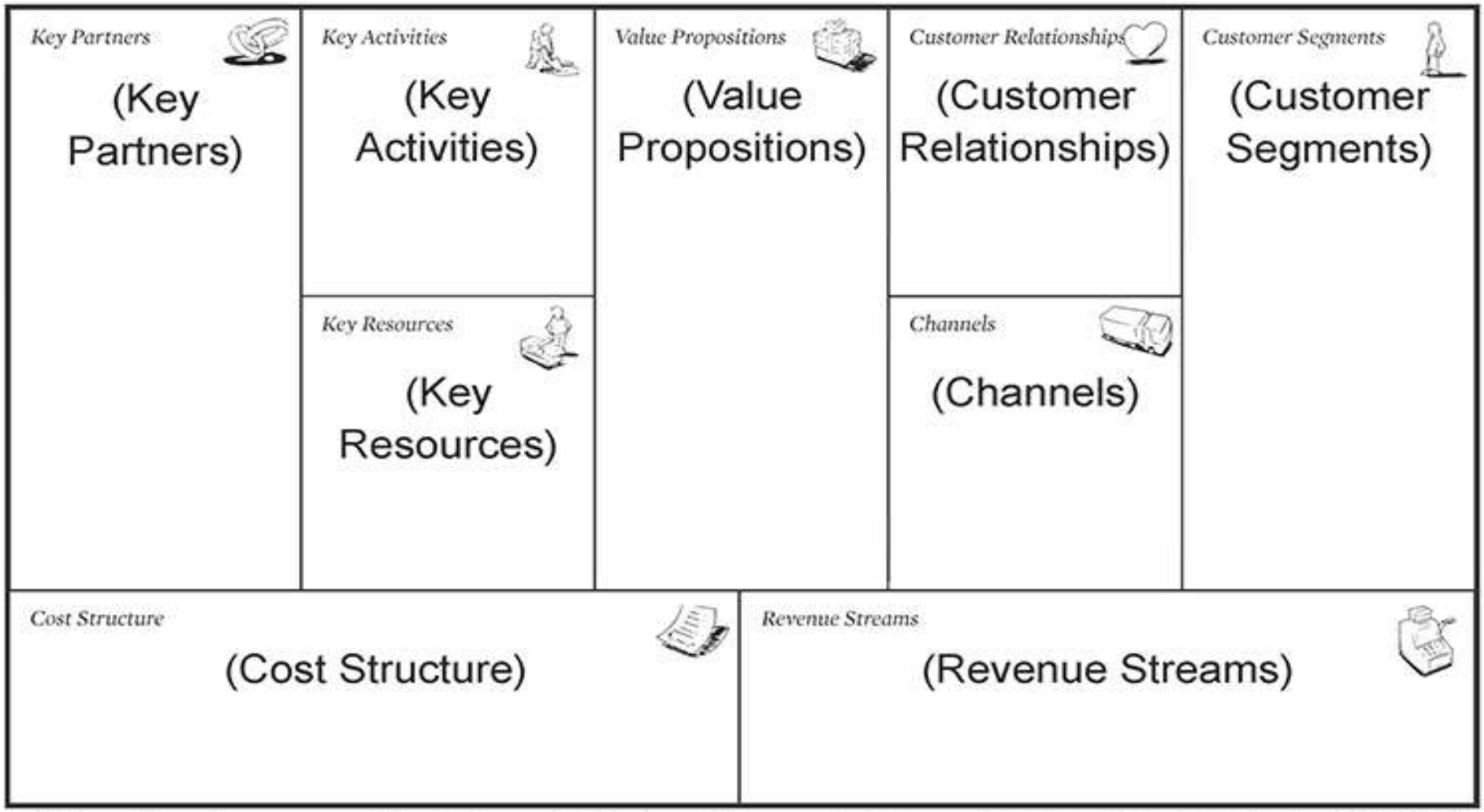
Where are you in the value chain



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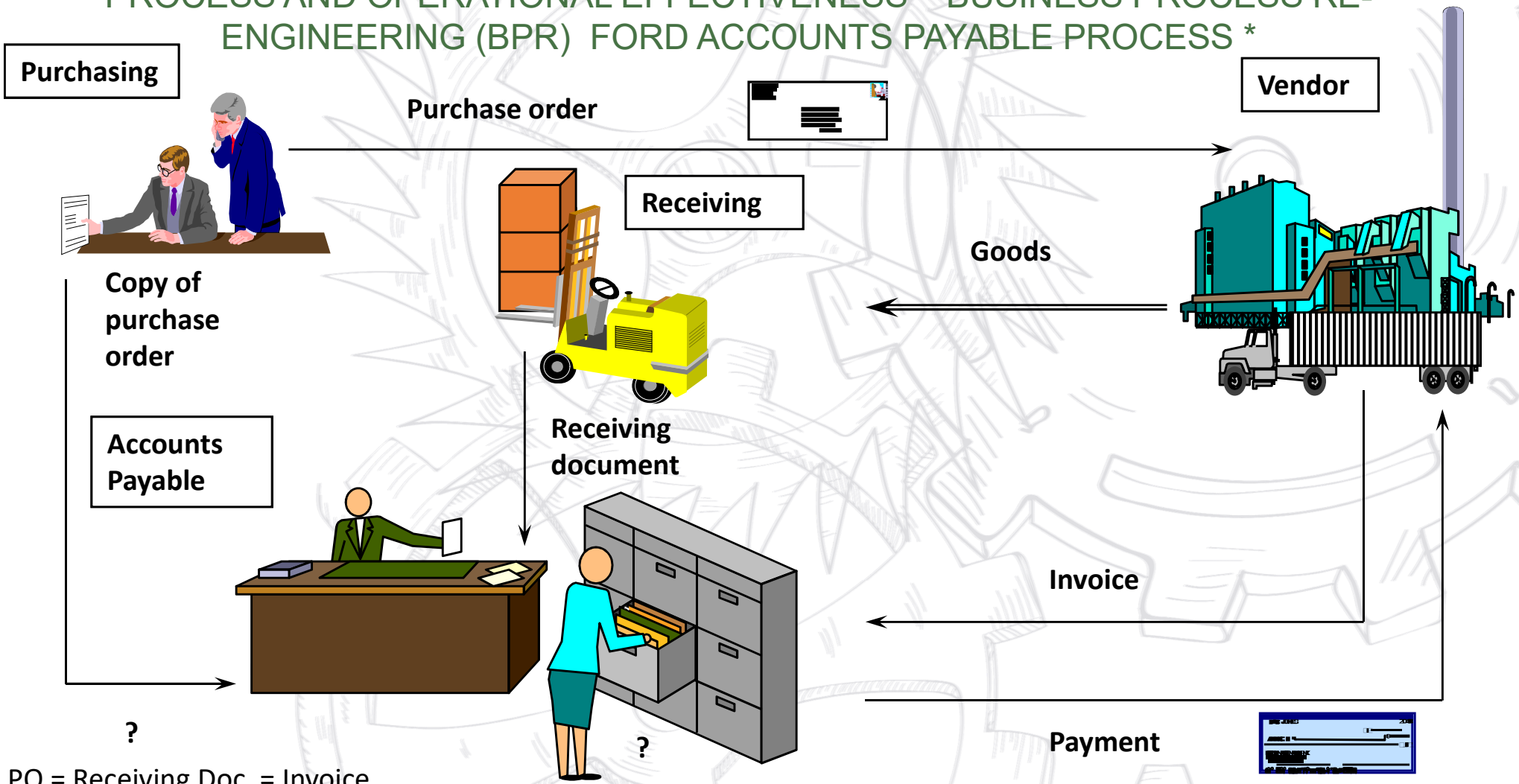
PROCESS AND OPERATIONAL EFFECTIVENESS – BUSINESS PROCESS RE-ENGINEERING (BPR) FORD ACCOUNTS PAYABLE PROCESS *



*Source: Minder Chen, 1993-2011, Adapted from Hammer and Champy, 1993

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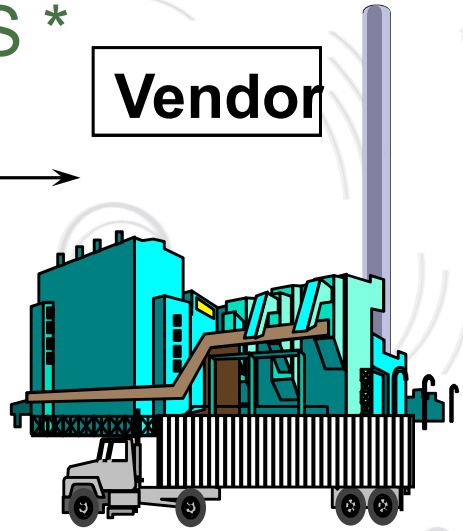
FORD'S PROCUREMENT PROCESS *

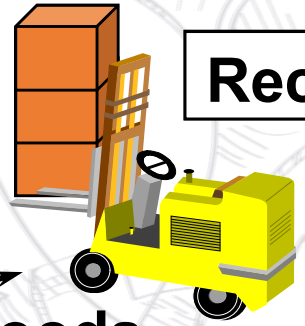
Purchasing

Purchase order

Vendor



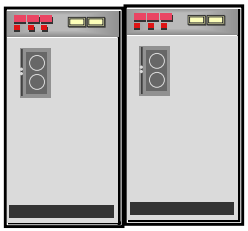
Receiving



Goods

Purchase order

Goods received



Data base

Accounts Payable

Payment

*Source: Minder Chen, 1993-2011, Adapted from Hammer and Champy, 1993

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Process and Operational Effectiveness

- Understanding Processes mapping

- Business process mapping is the first step towards process improvement
- It refers to activities involved in defining what a business does, the roles and responsibilities, to what standard a business process should be completed, and how the success measures can be determined
- A business process map is a flow chart with additional detail such as inputs and outputs of each process step
- Not all the answers to the needed process improvement measures in a business lay within the process map. Many factors can impact a process – e.g. departmental structure, lack of clear roles and responsibilities, lack of strategy, misaligned KPIs etc.– that won't necessarily show up on a process map

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Process and Operational Effectiveness - Understanding Processes mapping

- Process are specific steps to serve a client or a market
- Process properties
  - Specific order in timing and place
  - Has a beginning and end
  - Has inputs and outputs
  - Focuses on client
  - Explains how work flows
  - Clear responsibility for each process
  - Can be assessed

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Process and Operational Effectiveness – business process re-engineering (bpr)

WHEN? THE SYMPTOMS

- Extensive information exchange, data redundancy and re-keying
- Huge inventory, buffers and other assets
- Too many controls and checks
- Rework, iteration and duplication of work
- Complexity, exceptions, special cases and short cuts
- Procedures and outcomes are not clear and concise

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Process and Operational Effectiveness – business process re-engineering (bpr)

WHY? THE DIAGNOSIS

- Poor governance and ownership
- No specific sequencing of work activities across time and place
- Undefined inputs and outputs and more importantly, outcomes
- Lack of performance measures/indicators
- Lack of strategy

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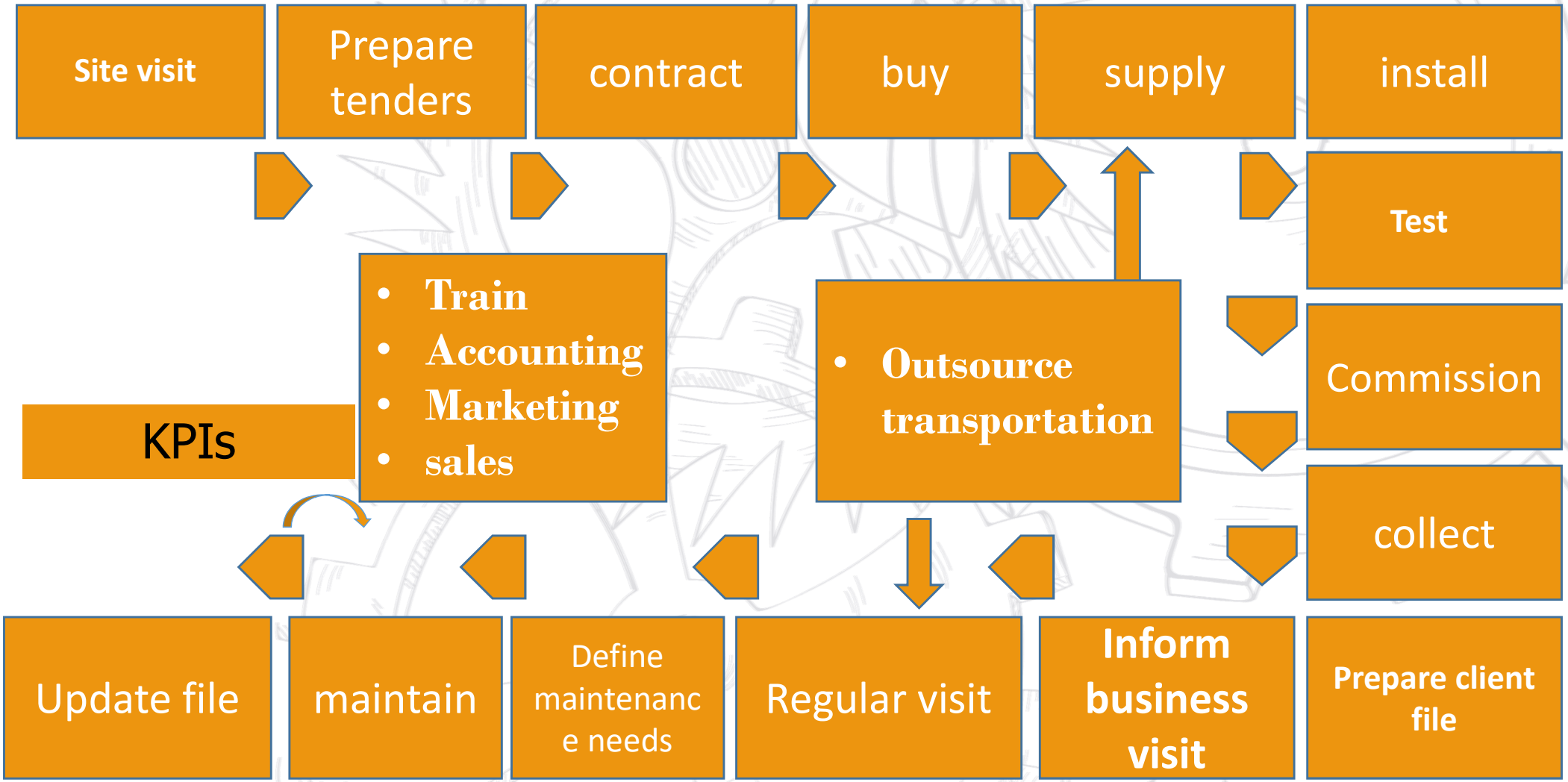
Business Value chain



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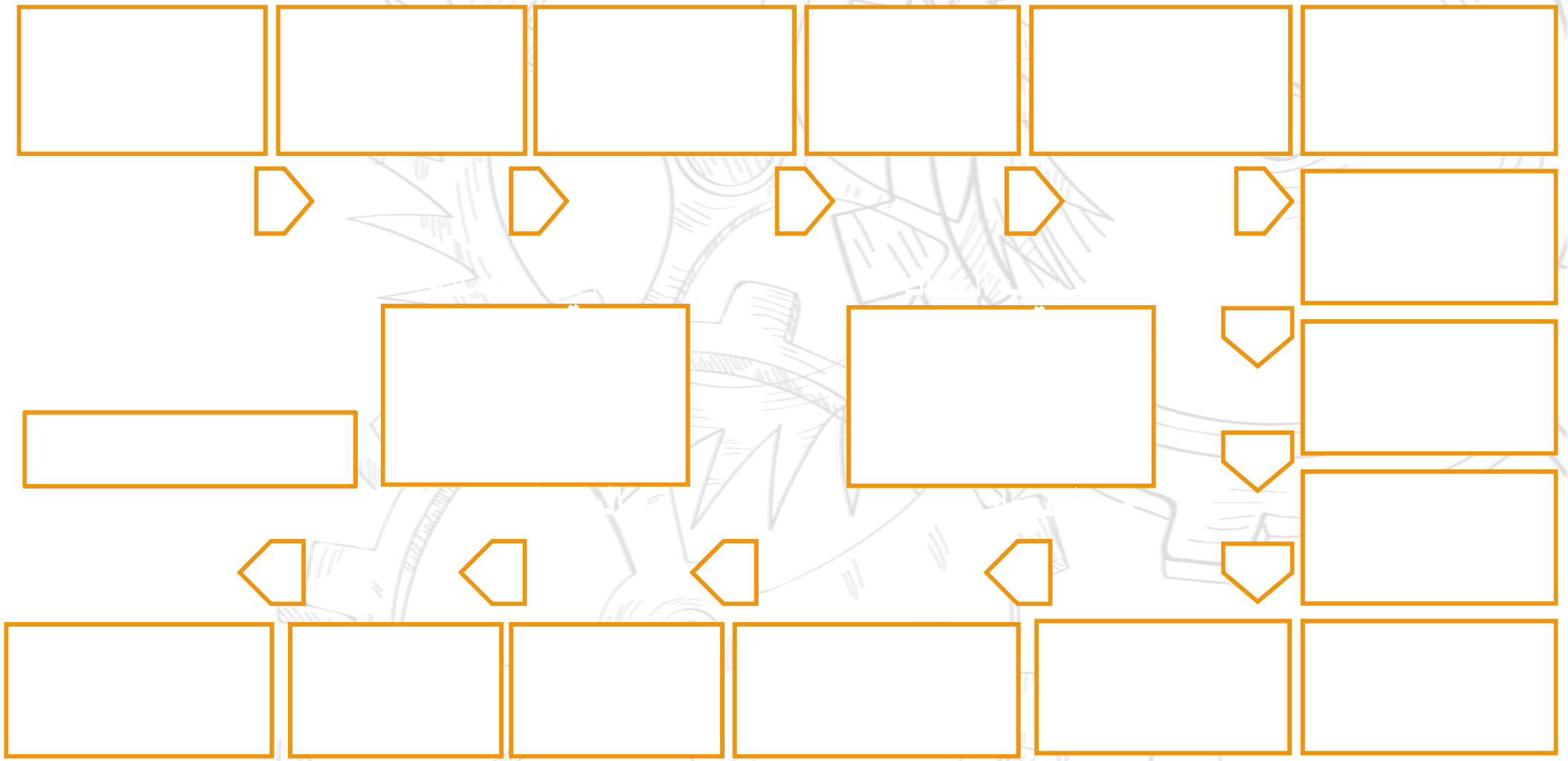
Map your Value chain



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Understanding process mapping– Example – Purchasing Process

Process (Level 1)	Sub-process (Level 2)
1. Vendor Selection and Management	1.1 Vendors Evaluation and Selection (Pre-qualification) 1.2 Vendor Master File Maintenance 1.3 Vendor Violation
2. Tendering Process	2.1 Purchase Requisition Processing 2.2. Tender Execution – Technical Evaluation 2.3 Tender Execution – Financial Evaluation
3. Contest process	3.1 Purchase Requisition Processing 3.2 Contest Execution – Technical Evaluation 3.3 Contest Execution – Financial Evaluation
4. Bid Extension	4.1 Bid Extension
5. Vendors' Appeal	5.1 Vendors' Appeal – Technical 5.2 Vendors' Appeal – Financial
6. Direct Ordering	6.1 Direct Ordering
7. Contract Awarding	7.1 Contract Awarding
8. Good/Services Receipt	8.1 Goods/Services Receipt
9. Goods Issuance	9.1 Goods Issuance

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Understanding process mapping– Example – Purchasing Process

Process (Level 1)	Sub-process (Level 2)

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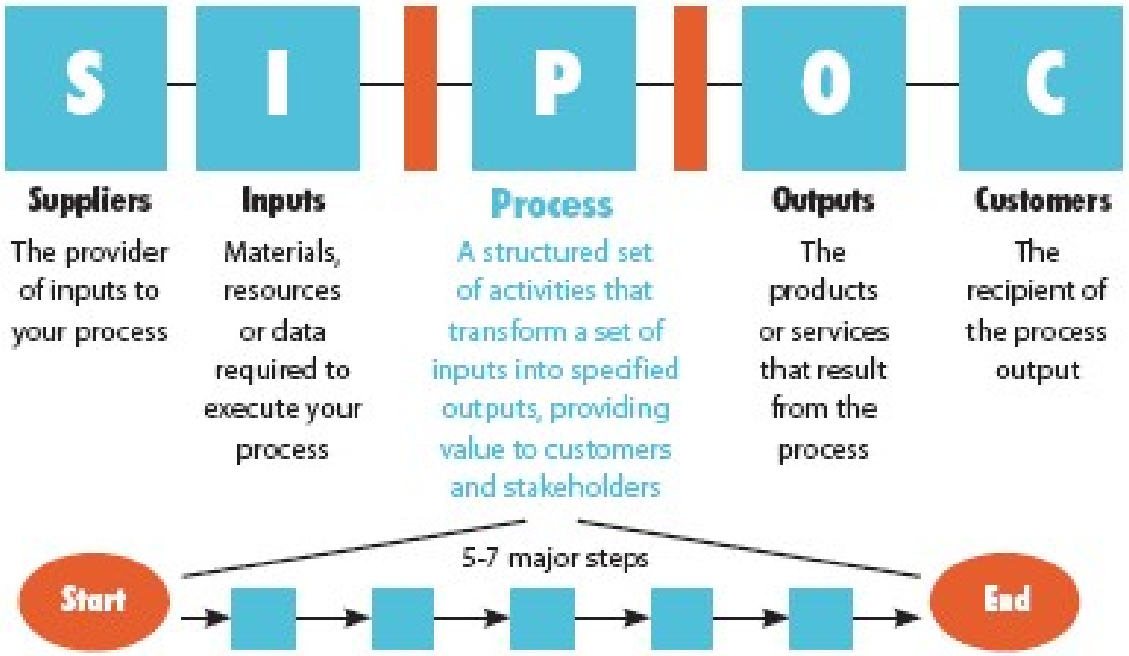
Understanding process mapping – sipoc approach

- **S**upplier
- **I**nput
- **P**rocess
- **O**utput
- **C**ustomer

Figure 1. SIPOC – understanding processes



Source: mentorsonline.wordpress.com

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Understanding process mapping – sipoc approach

- Simple approach to map business through inputs and minimum activities
- IT is good start to map business in a simple way
- Provides over all picture of business and interrelations of activities

Source: mentorsonline.wordpress.com.

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Understanding process mapping – swim lane mapping approach

- Swim lane Mapping is a technique that graphically shows the logical relationships between activities and the organizational responsibilities i.e. which individuals, positions, functions, locations or departments perform each activity or task
- Swim lane maps are used to:
  - Describe/record the various organizational responsibilities for the different process activities and tasks
  - Highlight the hand-offs between the responsible parties who may be internal or external e.g., hand-offs to different sub-departments, departments, divisions, external customers and suppliers
  - Check the completeness of the Process Maps

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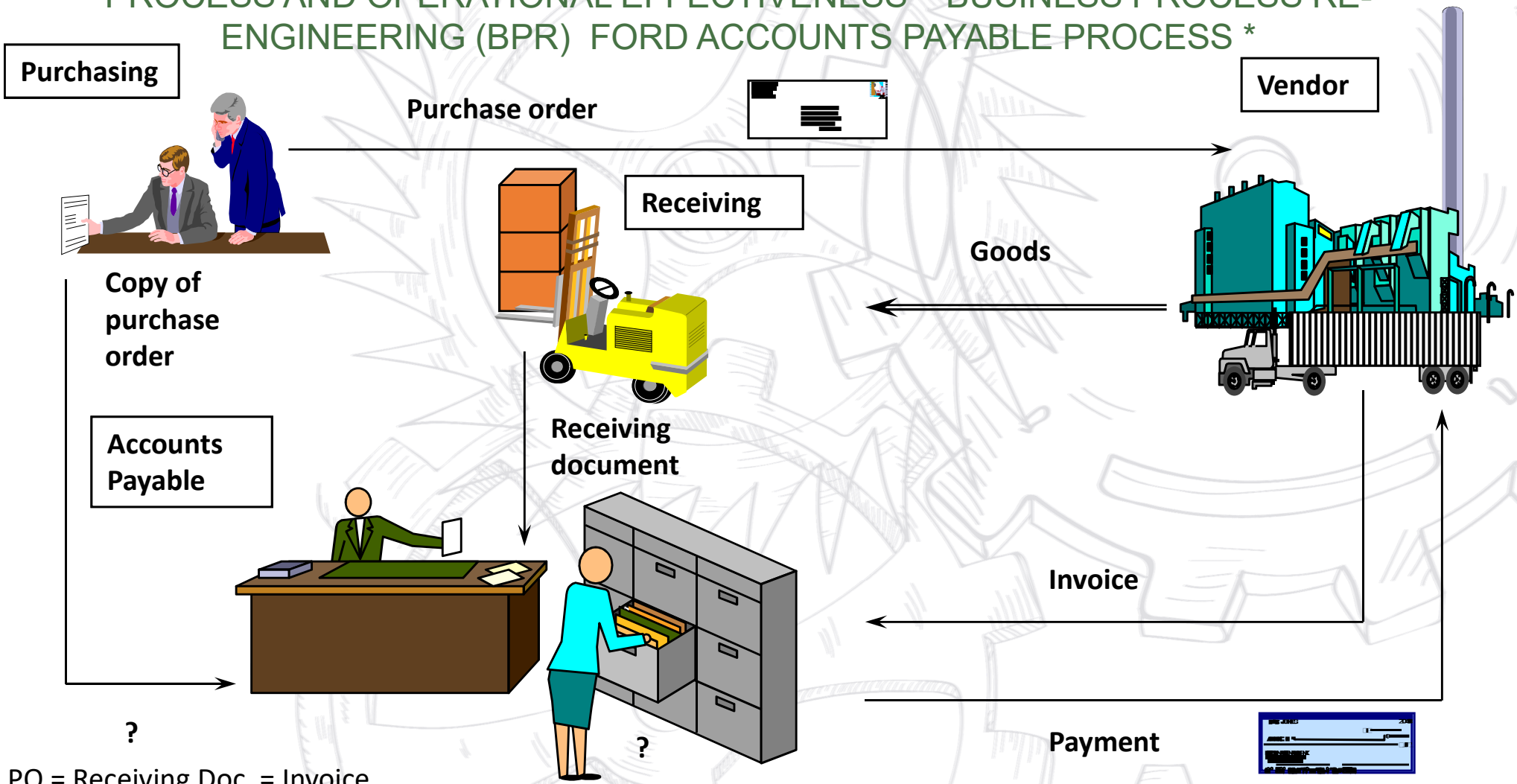
PROCESS AND OPERATIONAL EFFECTIVENESS – BUSINESS PROCESS RE-ENGINEERING (BPR) FORD ACCOUNTS PAYABLE PROCESS *



*Source: Minder Chen, 1993-2011, Adapted from Hammer and Champy, 1993

Business models | Strategic plans | **Organiz./operations** | Understanding / analyzing markets

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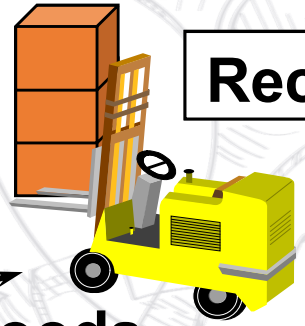
FORD'S PROCUREMENT PROCESS *

Purchasing

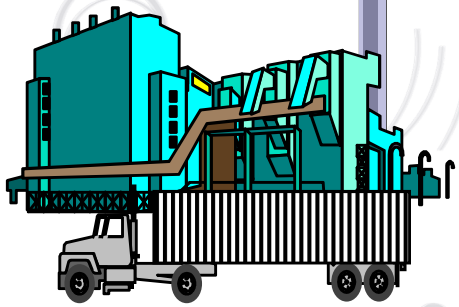
Purchase order

Vendor



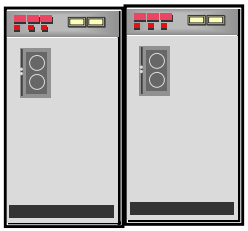
Receiving

Goods



Purchase order

Goods received



Data base

Accounts Payable

Payment

*Source: Minder Chen, 1993-2011, Adapted from Hammer and Champy, 1993

Ford Examples

Before

- more than 500 employees
- slow process
- high level of mistakes

After

- Reduce labour by 75%
- Minimize paper work
- electronic validation
- improved efficiency

Source: https://www.slideshare.net/EPetruk/the-4-steps-in-business-process-mapping

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Understanding process mapping –

Determine the approach to be used to gather information:

- Interviews
- Observation/site visits
- Workshops
- Reviewing existing documentation e.g., computer systems documentation
- Focus Groups
- Surveys/questionnaires
- Research

Source: https://www.slideshare.net/EPetruk/the-4-steps-in-business-process-mapping

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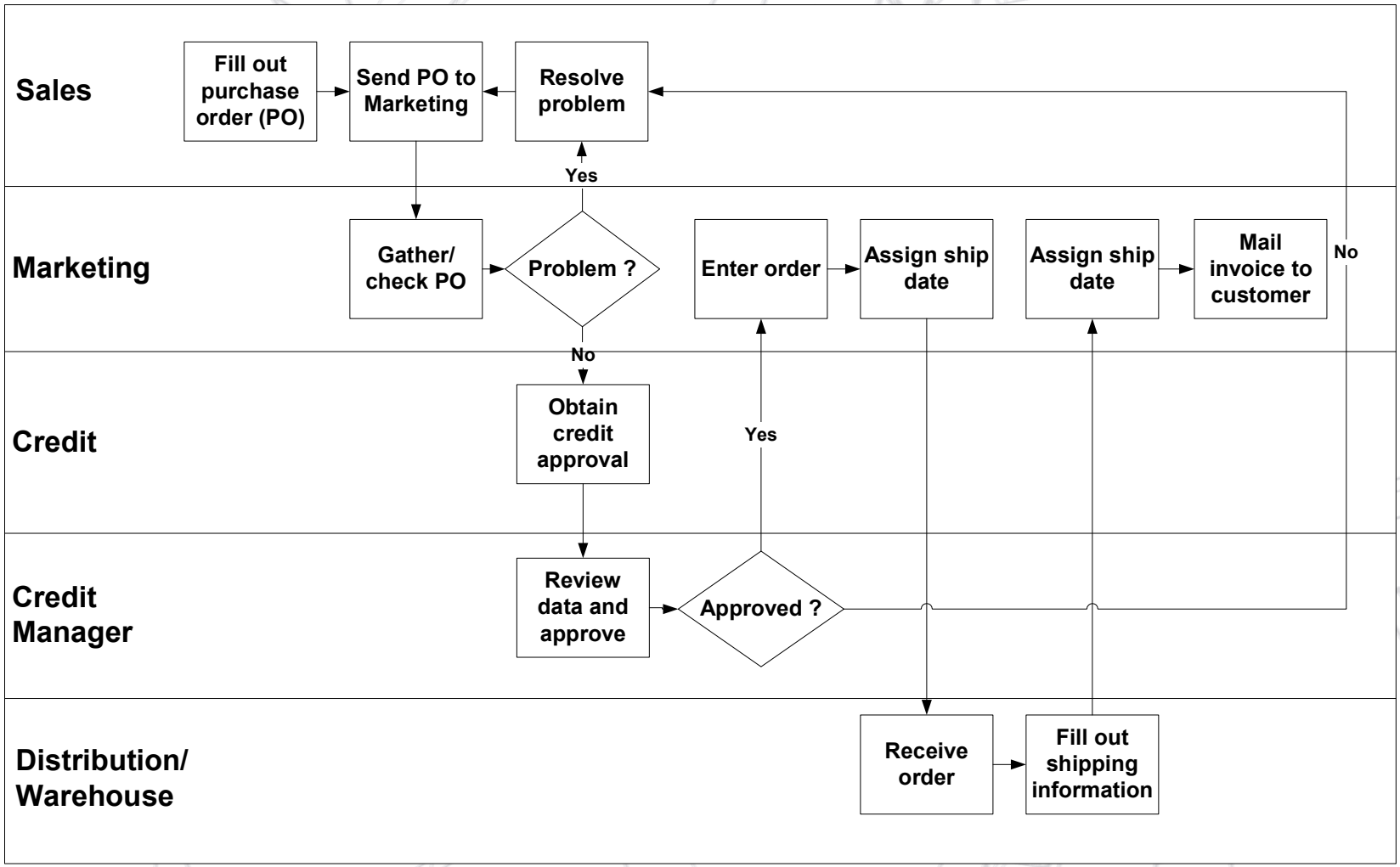
Sample Swim Lane Map (or Functional Boundaries Diagram)



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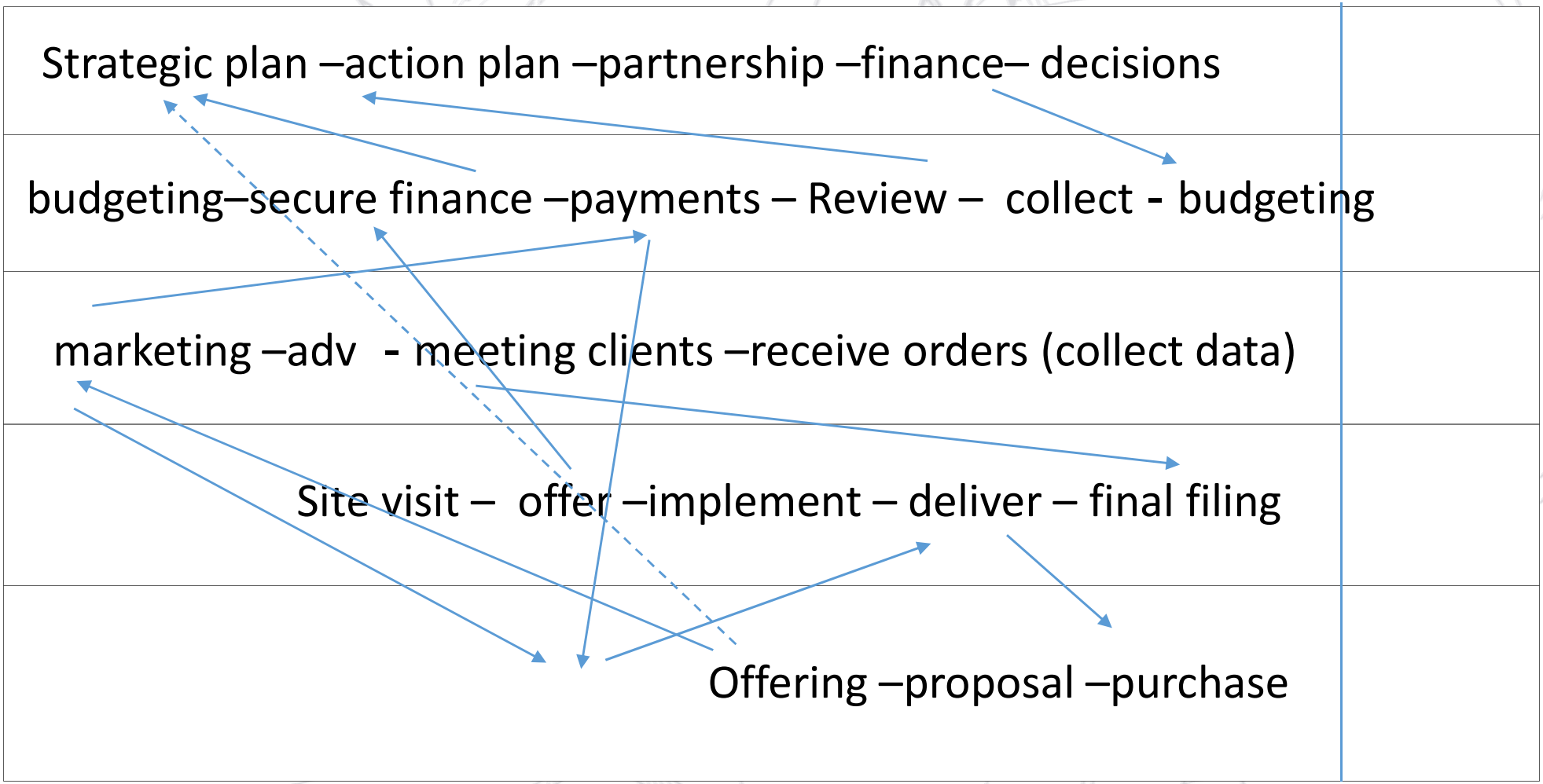
SWIM Lane



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SWIM Lane

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Understanding process mapping – recording

- Who performs each activity?
- What generates the process/task?
- What forms and reports are used?
- What computer systems, specific software programs, and files are used? • How do we do it? Why do we do it?
- Are there any alternatives to the activity?
- What products/tools/supplies are needed?
- What decisions are made in the process?
- What happens next?
- What sequence are the activities performed in?
- Who reviews it and when?

Source: https://www.slideshare.net/EPetruk/the-4-steps-in-business-process-mapping

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Understanding process mapping – recording

- What approvals are needed?
- How long does it take?
- How does this affect the customer?
- What is the nature, frequency and cause of errors/problems?
- How are errors/problems/exceptions handled?
- Where does the output go?
- What rules need to be taken into consideration?
- What other processes is this process liked to?

Source: https://www.slideshare.net/EPetruk/the-4-steps-in-business-process-mapping

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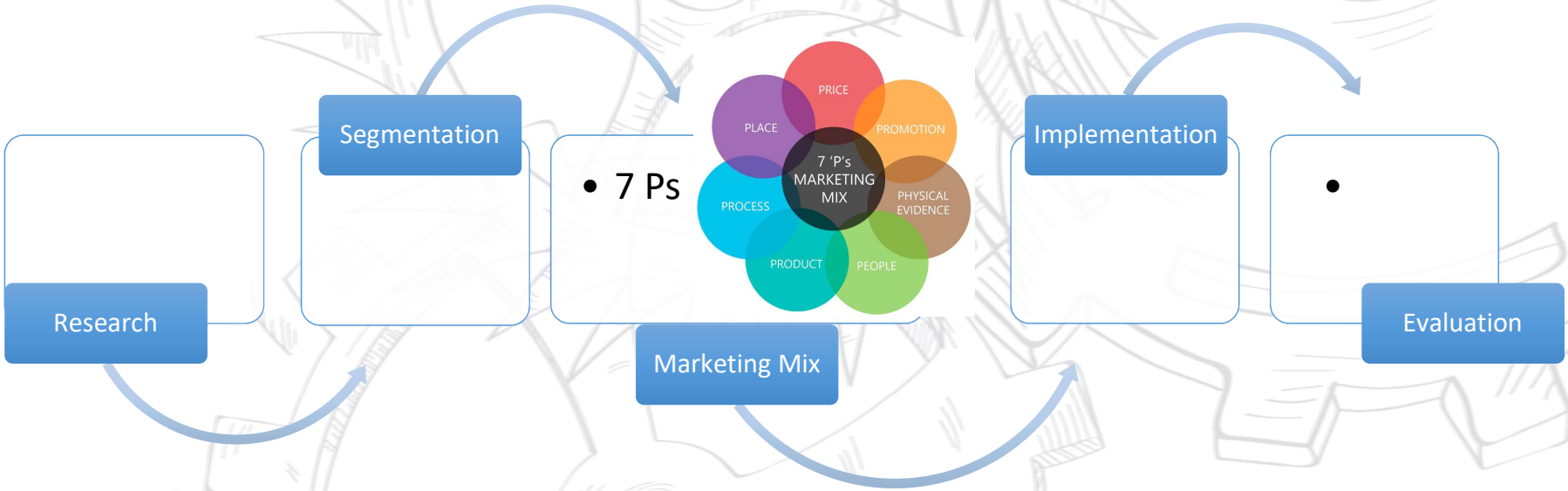
Marketing process



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Marketing

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Marketing

Product

There is no point in developing a product or service that no one wants to buy, yet many businesses decide what to offer first, then hope to find a market for it afterwards.

NOTE: Successful companies find out what customers need or want and then develop the right product with the right level of quality to meet their expectations, both now and in the future.

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Product

Answer	Question	Product
• People buy products that serve their needs • Can only be determined by market research	Does it serve the client	
Solar heater • comfort		

Marketing

Price

A product is only worth what customers are prepared to pay for it. The price needs to be competitive, but this doesn't mean you have to be the cheapest in your market – small businesses can compete with larger rivals by offering a more personal service, value-adds or better value for money.

NOTE: The more you charge, the more value or quality your customers will expect for their money.

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أساليب التسويق

Annual margin	Pace per month	sales
113%	1	1
170%	1.1	5
197%	1.2	7
192%	1.75	10
197%	2	12
188%	2.5	14
181%	3	16

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Price

Answers	Questions	
Balance between competitive prices and profit • Cost of product and sizing • Client paying capacity must be considered •	Which prices should I research	Price
• **Solar system for a mall** • Electricity price • New heater price • Competitor price		

Marketing

Place

The product must be available in the right place, at the right time and in the right quantity, while keeping storage, inventory and distribution costs to an acceptable level.

NOTE: The place where customers buy a product, and the means of distributing your product to that place..

Marketing

Promotion

Promotion is the way a company communicates what it does and what it can offer customers. It includes branding, advertising, PR, corporate identity, social media outreach, sales management, special offers and exhibitions. Promotion must gain attention, be appealing, send a consistent message and - above all - give the customer a reason to choose your product rather than someone else's.

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Marketing

People

Everyone who comes into contact with your customers will make an impression. Many customers cannot separate the product or service from the staff member who provides it, so your people will have a profound effect — positive or negative — on customer satisfaction.

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People

Answers	Questions	
Each person in contact with client needs to leave a good impression and fits the product reputation	What trainings are needed? How to delivery message	People
Sell to factory Feasibility studies saving finance		

Marketing

Process

Many customers no longer simply buy a product or service - they invest in an entire experience that starts from the moment they discover your company and lasts through to purchase and beyond.

NOTE: That means the process of delivering the product or service, and the behavior of those who deliver it, are crucial to customer satisfaction. A user-friendly internet experience, waiting times, the information given to customers and the helpfulness of staff are vital to keep customers happy.

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Process

Answers	Questions	
The process needs to be easy and satisfying to the client, short waiting list, enough information	What is the client experience	Process
Selling to factory Weekly visit Feasibility in 2 days Offer, implement Monthly visit Service in one week through hotline		

Marketing

Physical evidence

Choosing an unfamiliar product or service is risky for the consumer, because they don't know how good it will be until after purchase. You can reduce this uncertainty by helping potential customers 'see' what they are buying .

NOTE: A clean, tidy and well-decorated reception area – or homepage - is reassuring. If your digital or physical premises aren't up to scratch, why would the customer think your service is?

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Marketing

IS THERE AN 8TH P?
Productivity & quality

"Is what you're offering your customer a good deal?"

NOTE: This is less about you as a business improving your own productivity for cost management, and more about how your company passes this onto its customers.

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Marketing approach	Exporting factory	Mall (saving)	Eco-lodge
Product			
Price			
Place			
Promotion			
People			
Process			
Proof			

Marketing approach			Marketing approach
Product			Product
Price			Price
Place			Place
Promotion			Promotion
People			People
Process			Process
Proof			Proof

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Together Toward Efficient Production

Business Development and Growth Management for Solar Thermal Markets

Business Development – Day 3

January 15th , 2020

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Day 3

- determining actual costs, overheads, cost structure, and learn how to price after sales services. Firms will learn how to utilize data and business analytics to assess its performance as well as improve it. Finally, the firm will learn how to access finance and investments for itself and its clients.

Registration and Welcome Remarks	**09.00 – 09.30**
Review and reflections	09.30 – 10.00
Determining your actual costs	10.00 – 10 5
Cost of after sales	10 5 – 11.30
Business Analytics	11.30 – 12.00
Access to finance	12.00 – 12 5
Recap and reflections	12 5 – 13.30

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Cost Structure

- Cost of SWH has various components
- Material cost are easy to determine
- However, there are other hidden costs
- What are other costs?
  - Direct → relate to selling a unit
  - Indirect → paid in all cases

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Direct or Indirect

Labor

- Engineers
- Installation technicians
- Maintenance technicians
- Other employees

Transportation

- System
- Installation team

Office

- Rent
- Bills
- Storage place
- Others

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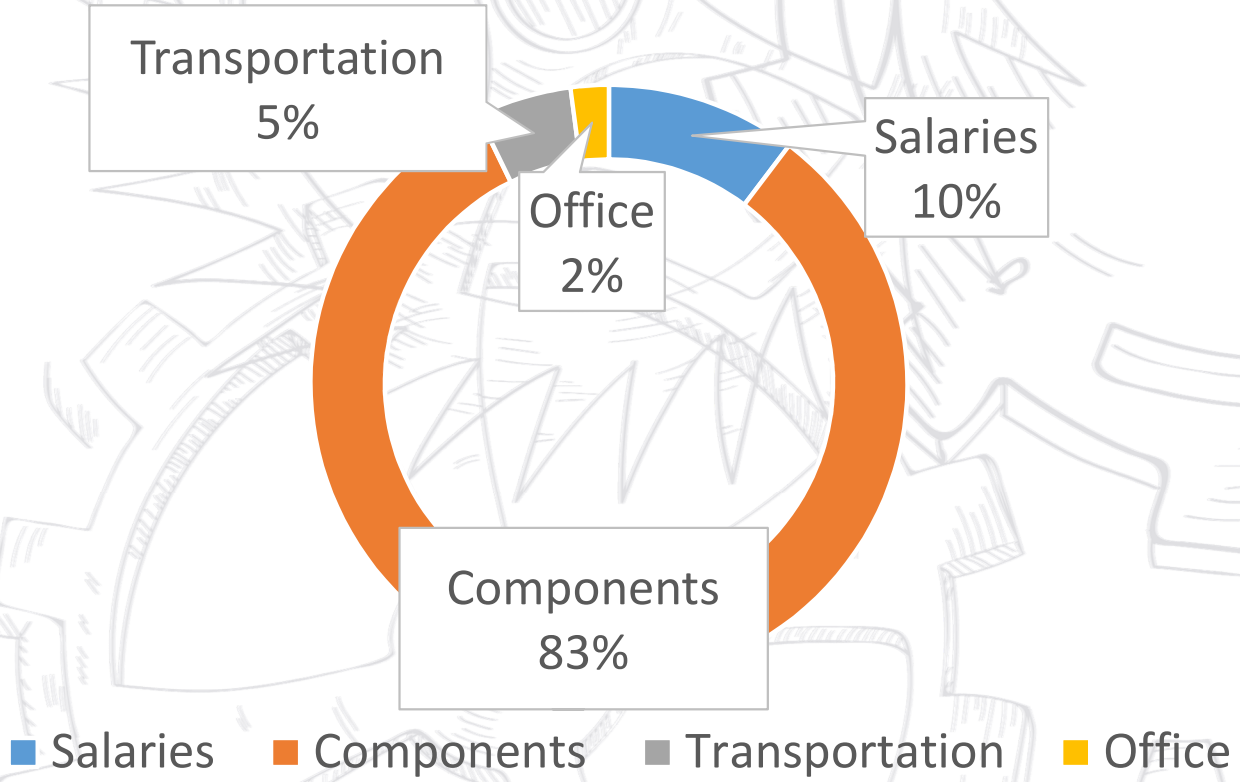
Hidden Cost

- There are many hidden cost
- How do you calculate the costs below?



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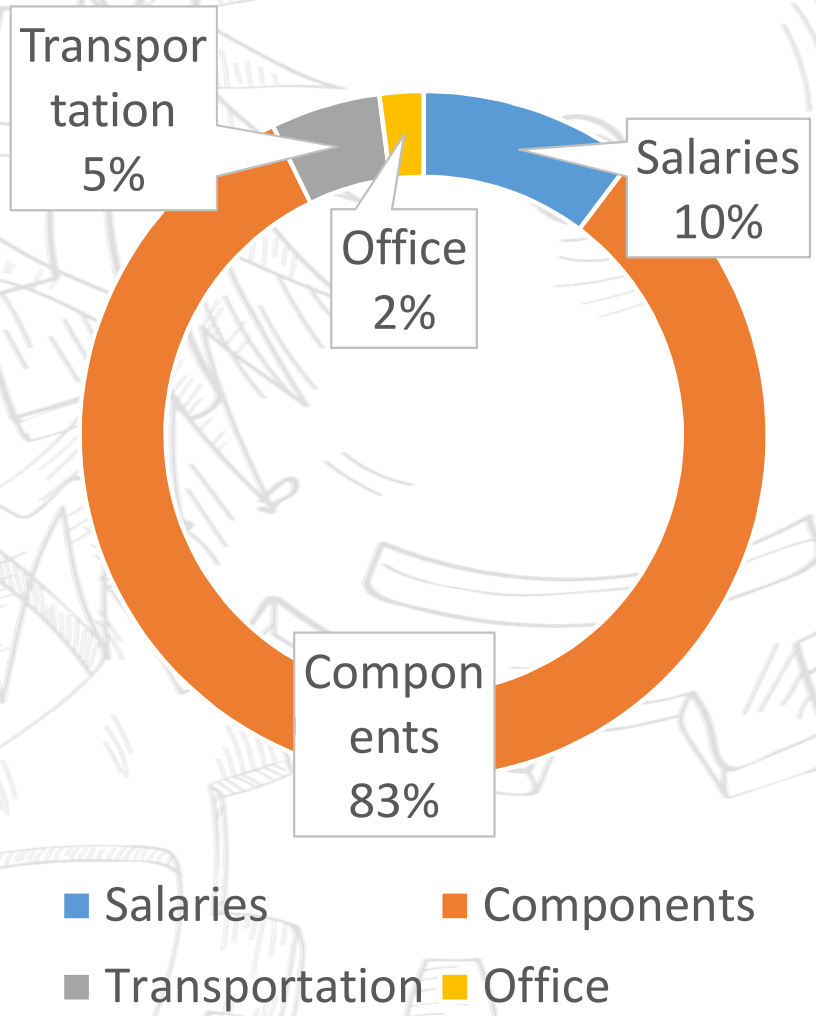
Hidden Cost

- Calculate all costs of expenses line item and divide by number of units solid
- Can lead to errors
- Make some systems more expensive than others



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Hidden Costs

- If storage is only for one type projects, I should allocate its cost only to that product
- If my engineers spend more on industrial system, there cost must go more to industrial systems
- If my marketing team spending more time to promote residential heaters then costs should go to heaters and so on

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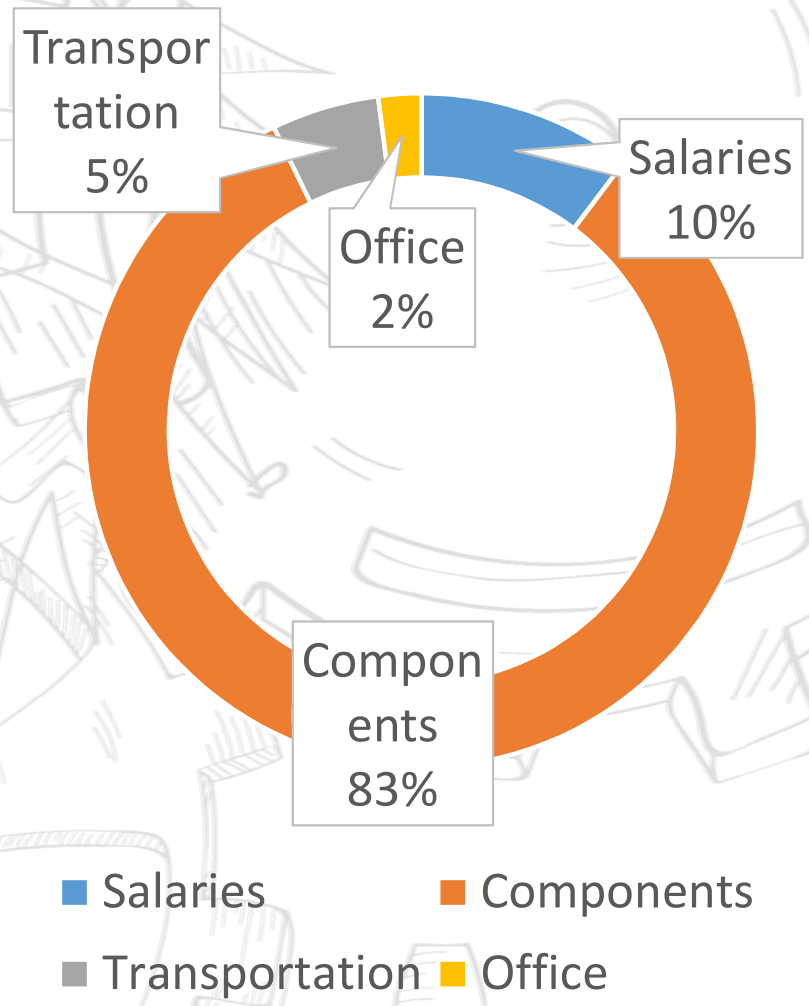
Do u know this figure for your firm?

- Lets calculate cost
- Determining cost of marketing, salaries to install the system is crucial and difficult



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Salaries

- Split salaries into direct and indirect
- Accountant?
- Designer ?
- Installers?

Salaries

- Split salaries into direct and indirect
- Accountant? Do divide by total number of systems
- Designer ? Calculate hours spent
- Installers? Calculate hours spent
- Compare total hours spent for previous year hours not spent working (part of the overhead)

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Example – EPC/Installer

- A firms sell 100 heater per years in residential sector
- It sells 5 systems to malls per year
- It has 2 installers and 1 Engineer
- It pays the 2 installers 100,000 EGP per year and 1 Engineer 100,000 EGP per year and it assumes 300 working day per year
- It takes the team 2 days of work to install 1 home system 10 days and 10 days to install a commercial system

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Example

- A warehouse is rented to store home systems for 100,000 EGP per year
- Office rent is 100,000 EGP per year
- Transportation cost from home systems per year is 100,000 EGP per year
- Transportation cost for 50,000 EGP for commercial systems
- Administrative salaries are 100,000 EGP per year

Example

- The home system costs 5,000 EGP
- The commercial system costs 20,000 EGP per year
- Calculate the cost if the company sells 5 commercial systems per year and if the company sells 10 commercial systems per year

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After sales cost

- The team can cover the after sales visit of 4 systems per day (100 systems needs 25 days visit)
- The after sales include one visit for the client per year
- There is an increase 10% in salaries per year
- Calculate cost of service for year 1 and year 2

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Business Analytics

- Currently it is easy to collect and analyze data
- Business analytics allow firm to Its strengths
  - ✓ Determine its weaknesses
  - ✓ Determine its strengths
  - ✓ Diagnose problems
  - ✓ Predict problems

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Business Analytics

- Needed for planning
- Brings the best out of the team
- Allow firm to grow effectively
- Improves decision making
- Enables delegation and institutionalization
- Avoid problems (decrease in marketing effectiveness, increased time to response or implement)

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Business Analytics – Indictors

- Indictors must be carefully selected to reflect what the firm wants to measure
- They have various types
  - **Qualitative vs quantitative**
  - **Leading vs lagging**
  - **Efficiency vs effectiveness**
  - **Input/process/output/outcome**

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Business Analytics – Indictors

- Qualitative vs quantitative
  - ✓ This is probably one of the most popular approach to defining KPIs.
  - ✓ Usually, KPIs that measure personal traits and perceptions are considered qualitative, while the rest are quantitative.
  - ✓ In practice, it all comes down to quantitative data when measuring a KPI
  - ✓ even if this data reflects qualitative aspects, such as opinions.

Business Analytics – Indictors

- Qualitative
  - ✓ Customer satisfaction (from 1 to 5)
- Quantitative
  - ✓ Number of closed deals from offers presented

Business Analytics – Indictors

- Leading vs lagging
  - this typology looks at the interdependencies between KPIs.
  - “Leading” refers to those KPIs that can influence future value,
  - While “lagging” includes KPIs that indicate past performance

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Business Analytics – Indictors

- Leading
  - ✓ Measure profits to determine future investment
  - ✓ .....
  - ✓ .....
  - ✓ .....
  - ✓ .....
- Lagging
  - ✓ Measure profits to determine efficiency
  - ✓ .....
  - ✓ .....
  - ✓ .....
  - ✓ .....

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Business Analytics – Indictors

- Efficiency vs effectiveness
  - These categories are useful in understanding important dimensions of a process
  - The effectiveness looks at whether the desired outputs were generated
  - The efficiency indicates the extent to which time, effort or cost are well used for the desired outputs

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Business Analytics – Indictors

- Efficiency
  - ✓ Time needed to finalize project
  - ✓ .....
  - ✓ .....
  - ✓ .....
  - ✓ .....
- Effectiveness
  - ✓ Number of finance deals delivered versus attempted
  - ✓ .....
  - ✓ .....
  - ✓ .....
  - ✓ .....

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Business Analytics – Indictors

- **Input/process/output/outcome (Chain Results)**
  - Input KPIs → resources involved in achieving the objectives, : # Team members, $ Project budget;
  - Process KPI indicate the activities required to produce the expected outcomes: # Time to process invoices, % Equipment utilization rate;
  - KPIs refer to either the quality or the quantity of the goods or services created: # Items sold, # Electricity generated;
  - Outcome KPIs measure the impact achieved through the provision of goods and services: % Market share, # Customer satisfaction.

Business Analytics – Indictors

- Chain results allows diagnosis
- Imagine we want to increase profits through a new marketing plan
  - ✓ Input → budget spent, new team members
  - ✓ Process → client meetings
  - ✓ Output → projects delivered
  - ✓ Outcomes → Profits increase in percentage

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Business Analytics – Indictors

- ✓ Input
  - ✓ .....
  - ✓ .....
- ✓ Process
  - ✓ .....
  - ✓ .....
- ✓ Output
  - ✓ .....
  - ✓ .....
- ✓ Outcomes
  - ✓ .....
  - ✓ .....

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Business Analytics – Indictors

- Operational vs Strategic
- Both are needed to test business
  - Strategic → new markets, improved performance
  - Operational → sales, profits

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Utilizing Solar Energy for Industrial Process Heat

Most important indicators

- Suppliers indicators to chose suppliers and plan cash flow
  - Response (delivery on time)
  - Speed (delivery time)
  - Quality
  - Payment conditions

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Most important indicators

- Effectiveness
  - Speed of delivery
  - Speed of design
  - Number of people needed
  - Transportation costs

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Indicators Analysis

- Efficiency performance → predict failures, bonuses
- Marketing effectiveness → choosing best client
- Spending → cost structure
- Client indicators → priority, payment conditions

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Marketing Effectiveness

- How do clients reach me → tune marketing
- What is the percentage deals closed per type of client (correlations)
- How many offers are presented versus client meetings
- Why clients doesn't ask for an offer (not interested, already have, doesn't understand the product)
- How many offers are accepted
- Why offers are rejected (financial, technical)
- Follow both outputs and effectiveness for your team

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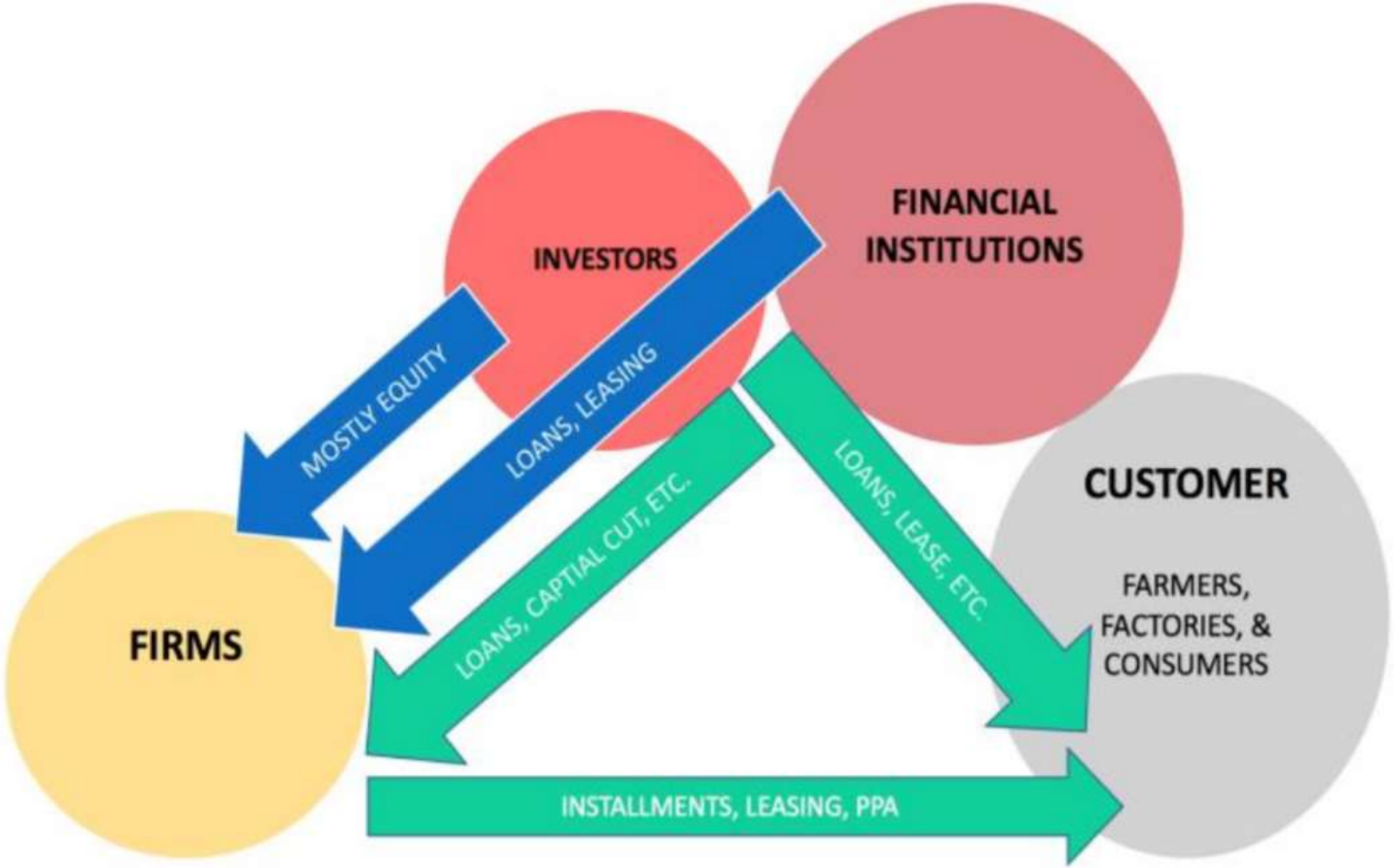
Access to Finance



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Access to Finance

- Key is understanding financial services and their philosophy
- Loans are most well known financial services but there are others
  - Leasing
  - Factoring
  - Payment facilities, etc

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Access to Finance

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Access to Finance

- Some tools mainly focus on clients cash flow, other focus on the asset
- Some tools come from bank resources others and special financial products
- Some finance is technology focused through specific programs

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Access to Finance

- Various views exist while assessing clients
- Credit vs risk
- Each focus on something
- Technology focused lending is easier to access

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Access to Finance

- Different types of Lending
  - ✓ Short term (working capital, payments in installments)
  - ✓ Long term (loan, lease)
- Features
  - ✓ Sector of focus
  - ✓ Asset finance (technology) or cash flow (corporate finance)
  - ✓ Sector of focus (type of client)
  - ✓ Size of client
  - ✓ Interest, size of loan, payment terms
  - ✓ Client contribution

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Access to Finance

- EBRD GEFF → 10% grant – interest 10% to 13% - firm and client – commercial and industrial
- EBRD VCFF → 10%-15% grant - interest 10% to 13% - firm and client – Firms revenue up to 2 Billion EGP – commercial industrial and agriculture
- EBRD NBE initiative ??
- New CBE of SMEs Industry Initiative → (10% interest)
- Eco-FEI → 3% up to 3 Million EGP → industry

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Access to Finance

- Checking bank ownership and portfolio is important
- Branch culture
- CIB has green credit lines and launched solar PV initiative
  - ✓ Loan amounts up to EGP 350,000
  - ✓ Loans cover up to 100% of the cost of solar panels
  - ✓ 50% discount on administrative fees
  - ✓ Preferential interest rates
  - ✓ Flexible loan tenor of up to 5 years.

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Access to Finance

- Valu Egypt – individuals
- EPAP III – if tied to emissions
- Alex Bank
- QNB
- Banque Misr
- NBK

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Access to Finance

- What banks look for
  - Client cash flow
  - Your situation and business performance
  - Suppliers of their clients
  - Their clients

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Access to Finance

- Working capital finance – factoring
  - Serve cash flow needs – short term
  - Available in most banks
  - Helps meeting immediate cash needs
  - Very much needed to serve rapid growth
  - More needed with longer cash conversion cycles
  - Conditions varies from a bank to the other

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Access to Finance

- Micro-finance
  - Satisfies cash flow needs, fast and effective
- Leasing
  - Asset based
  - Fast I response
  - Higher interest
- Overdraft
  - Satisfies cash flow needs, fast and effective