

# Preparing a negotiated R&D portfolio with a prediction market

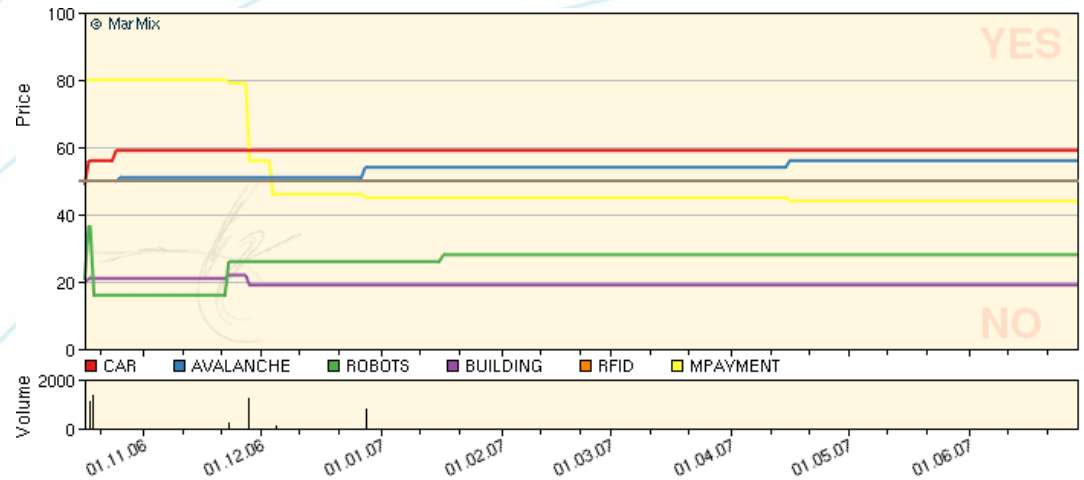
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- R&D Portfolio Management
- Prediction Markets Foundations
- Design Issues
- Evaluation of the Experiments
- Conclusions



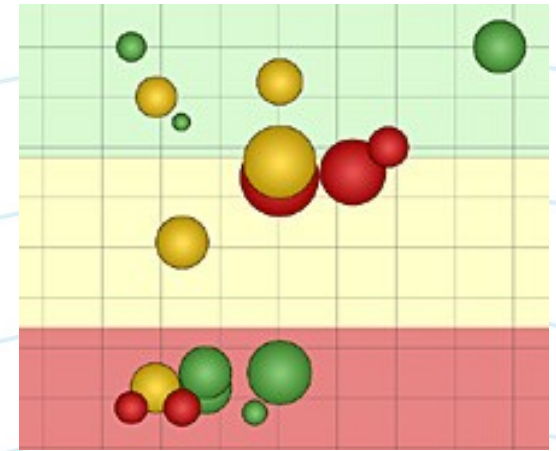
# R&D Portfolio Management (I)

The R&D project portfolio selection is a **periodic activity**, which aims at **optimizing** the research effort of the company, while enabling it to **select** a portfolio which corresponds to its **strategic objectives** and without **exceeding the resources** available.



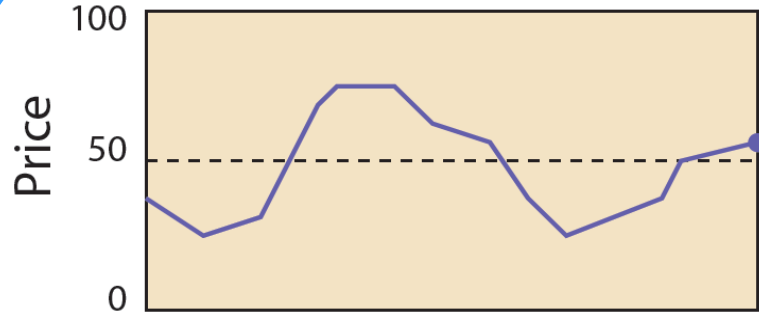


- Selecting the right criteria
  - Applicable to all projects
- Collecting the data
  - Lack of concrete information
  - Updating the data
- Negotiating the evaluation
  - Multi-actor or negotiation multi-criteria decision-making process



# Prediction Markets Foundations (I)

## « Will MICS be renewed for a third phase? »



If True M\$100 Gain: M\$45 / contract  
 If False M\$0 Loss: M\$ 55/contract

Sell (Qty)	Buy (Qty)	Last	Change
\$56 (10)	\$53 (45)	\$56	+2% ▲

Never! 55% is too high

Sell		Buy	
Qty	Price	Price	Qty
30	56	56	20
80	57	53	45
10	59	50	12
250	62	42	100

It will be true

I'm confident at 60%

# Prediction Markets Foundations (II)

- Selecting the right criteria
  - Implicit comparison criteria
- Collecting the data
  - Aggregate in real time the data
- Negotiating the evaluation
  - Continuous negotiation by the market-maker



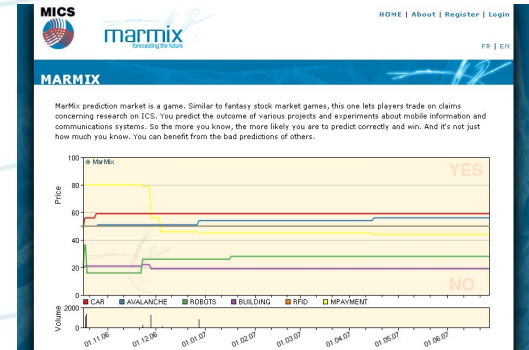
- Choice of forecasting goal
  - Claim Description
  - IPO
- Incentives
  - Interface
  - Lack of interest
- Market design
  - Market maker algorithm



### A prediction market for R&D should:

- integrate a **standard framework** to support claim formulation
- integrate an easy **IPO mechanism** to support the innovation process
- occult the **financial mechanisms** to reduce the trader's learning curve and increase his incentive
- allow the combination of **group sessions** with individual sessions to increase the incentive of the traders
- integrate an **automatic negotiation agent** i.e. market maker to increase the quality of the evaluation

# Conclusion



R&D Portfolio Problems	Prediction Markets Solutions	Design Propositions
Data collection and actualisation	Reduced to BUY/SELL, contributed by everybody	<ul style="list-style-type: none"> <li>Interface design</li> <li>Group sessions</li> </ul>
Comparison criterion selection	Implicit in BUY/SELL, aggregated in the price	<ul style="list-style-type: none"> <li>Claim description</li> <li>IPO process</li> </ul>
Judgment negotiation	Automatic market making between buyers/sellers	<ul style="list-style-type: none"> <li>Automatic Market maker</li> </ul>