

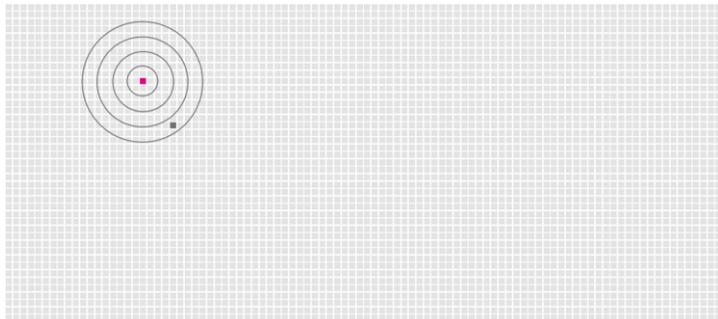
# ValueManager Portfolio Optimization

## From Imitation Game to Growth Game

Success in **innovation and product development** depends on creating products with outstanding, distinguishing attributes. Smart product concepts have a distinctive value proposition that focuses on specific target-customer needs.

Companies who managed to launch such a product in the past often make the **mistake of imitating** themselves. When looking for their next success they create more of the same instead of breaking new ground. The single most important question is therefore not “what is the optimum new product”, but “how can we grow the business”? The answer is typically not found in the vicinity of past successes.

Mathematical optimization often plays the ‘Imitation Game’: In today’s complex markets one can end up with millions of possible new concepts. The optimization space becomes too large and brute force methods get stuck in a local ‘optimum’.



To avoid the Imitation Game we borrow a conjecture from physical cosmology: The **Multiverse** theory assumes that our universe is only one of several parallel worlds existing in the same space and time. Objects in a given universe stay within their ‘neighbourhood’ forever, unaware of better worlds – unless two factors come into play and help exploring new opportunities:

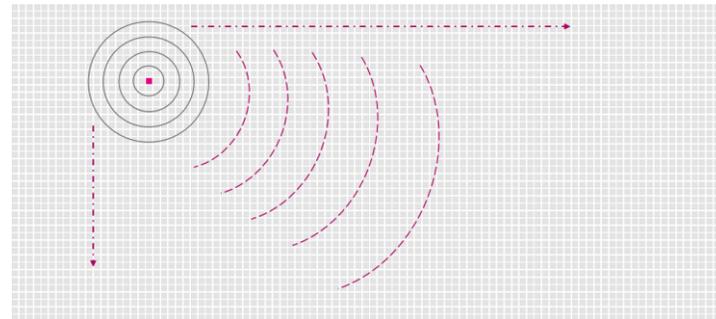
### Agility

Every universe has an inflation rate that causes its expansion through space as well as the likelihood of connections between one world and the next.



### Transit

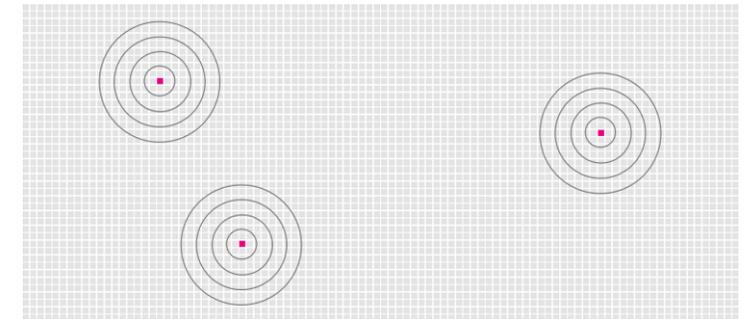
Wormholes act as ‘tunnels’ for objects to travel between any corners of a universe or from one universe to another.



In a similar fashion, markets are more or less complex, dynamic, innovative, with either curious and experimenting consumers or with conservative and inert customers. In any case the **market context** is critical for optimizing product and portfolio development.

Just as inflation rates and wormholes determine objects’ speeds and exchange rates in universes, we use **agility and transit parameters** to model the degree of dynamics and innovation we assume for our optimization search.

In Multiverse optimization, we still allow for a ‘neighborhood search’ if the market is inert and inflexible. Yet, for dynamic environments we assume a higher inflation rate and a greater wormhole probability. In these cases, we will be more likely to find new, differentiated product concepts that attract other consumer groups and thus grow the total portfolio.



# ValueManager Portfolio Optimization

If you stay where you are, you'll run into yourself

Let us take an **example**: The **mobile tariff market** is quite complex and dynamic:

- Tariffs can be prepay and postpay
- Services include voice, text messaging and data

Is this one market or more than one? Actually, it is both: The worlds of prepay vs. postpay and of voice and data are separate and interconnected at the same time.

Modelling the mobile tariff market as a **Multiverse** allows us to take distances between the worlds as well as links explicitly into account.

The **optimization goal** in our example is to find a portfolio of tariffs that maximizes the total market share of the brand (here: Vodafone). Each single tariff concept may not be 'best' as a stand-alone offer. But as a 'team' they shall attract as many customers as possible.

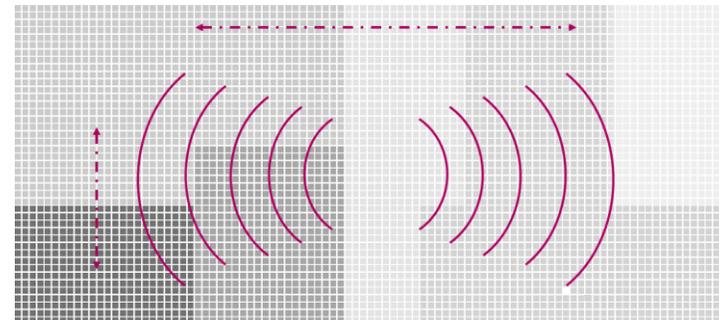
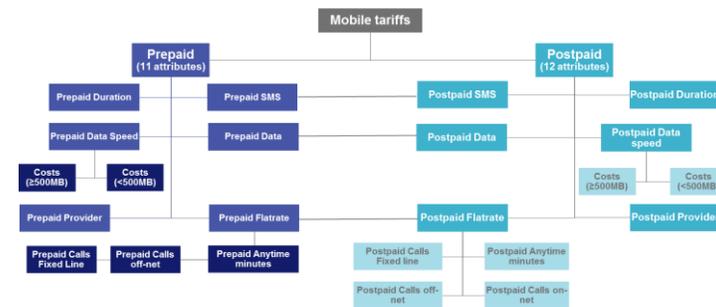
To reflect the **competitive market place reality** we simulate a scenario with three other providers, each offering a portfolio of prepaid and postpay tariffs.

For our Multiverse optimization we use parameters that reflect the high level of **market agility** and of customers' openness to switching between tariff worlds.

The **solution of our Multiverse optimization** gives us six tariffs for the example brand Vodafone, covering the whole multi-dimensional space:

- We get three prepaid and three postpay tariffs
- We get per-use as well as flatrate tariffs
- We get services with small and with large data packages included and with lower and higher data speeds
- Prices range from € 9.99 to € 34.99

In a similar way we could optimize the brand portfolio by starting with an existing portfolio and then expand it stepwise.



	Prepaid	Prepaid	Prepaid	Postpaid	Postpaid	Postpaid
Provider	Vodafone	Vodafone	Vodafone	Vodafone	Vodafone	Vodafone
Flatrate	Fixed line	On-net	Allnet	On-net	Fixed line	Allnet
Calls off-net	29 Ct./Min	19 Ct./Min	-	9 Ct./Min	9 Ct./Min	-
Anytime minutes	none	100 minutes	-	none	19 Ct./Min	-
Calls Fixed Line	500 MB	19 Ct./Min	Flatrate	9 Ct./Min	none	-
Data	200 MB	500 MB	500 MB	500 MB	300 MB	1 GB
Data Speed	7,2 mBit/s	3,6 mBit/s	14,4 mBit/s	14,4 mBit/s	7,2 mBit/s	14,4 mBit/s
SMS	5 Ct./SMS	Flatrate	Flatrate	Flatrate	5 Ct./SMS	15 Ct. SMS
Duration	1 month	1 month	1 month	12 months	12 months	24 months
Costs (<500MB)	14,99 €	9,99 €	19,99 €	24,99 €	24,99 €	34,99 €
Market share	9.1%	2.3%	1.7%	4.8%	4.2%	4.0%