



LICENSING EXECUTIVES SOCIETY
INTERNATIONAL

IP Valuation Committee

June 2018

Advancing the Business of Intellectual Property Globally



Why do we focus on intangible (IP) assets?

- **Intangible value of enterprises**

- Recognition of intangible assets as part of Company value
- Increasing trend of % intangible value vs. total value
- A recognized need to increase market actors' confidence in Intangible Value
- Intangible assets interact: complementarity of assets

- **Intellectual Property assets**

- Intangible in essence
- In interaction with other assets (tangible and intangible – e.g. human capital)
- Protected by Rights and/or secret
- Forward-looking: what usage do they allow? **How and why are they bearing a value now or are they going to bear a value later ?**



Why value intangibles?

Because (some) economic value is needed for a wide spectrum of usages

- **Enterprise/ Management-Oriented**
 - R&D cost decision/allocation
 - Other strategic decision-making / cost allocations /...
- **Transfer-oriented**
 - Intra-Group Transfer Pricing
 - Licensing /Sale-purchase of technologies, trademarks
 - R&D partnerships, ...
- **Conflict-oriented : evaluation of damages**
- **Finance and accounting-oriented**
 - Mergers & Acquisitions: Purchase Price Allocations
 - Income or market- view (e.g. debt financing)



LES International IP VALUATION COMMITTEE

- **Our Objectives**

- Foster a common culture and understanding of IP Valuation, especially the economic perspective
- Prepare us to be able to use best judgement when choosing/applying/being provided with valuations
- Detect and promote complimentary and/or new approaches where needed

- **Our general roadmap**

- **Foster communication between local IPV committees**
- **Share and educate : share and update Toolboxes, Databases and Literature Repositories with LES members**
- **Methods and standards: share best practices, address qualitative and quantitative approaches as complimentary**



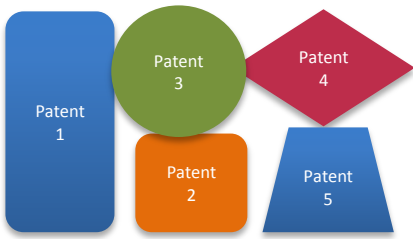
WHAT IS THE VALUE OF AN INTANGIBLE ASSET?

- **It is AN OPINION (*)**
 - At a given point in time
 - Under given circumstances
 - In many ways similar to a legal opinion, but considering economic terms
- **It is influenced and complicated by a huge spectrum of factors**
 - Need to evaluate the perimeter of IP Assets encompassed in the Opinion (patents, trademarks, know-how, designs, copyrights...)
 - Need to state the context in which the Opinion is requested : the way one uses an invention strongly depends on his own abilities
 - Need to find comparables, knowing that no two IP assets are equal: comparisons are at best judgements
 - Convincing forward-looking assumptions: the future is uncertain...
- **Thus it contains an intrinsic uncertainty.**

(*) Final Report from the Expert Group on Intellectual Property Valuation - European Commission, Nov 2013

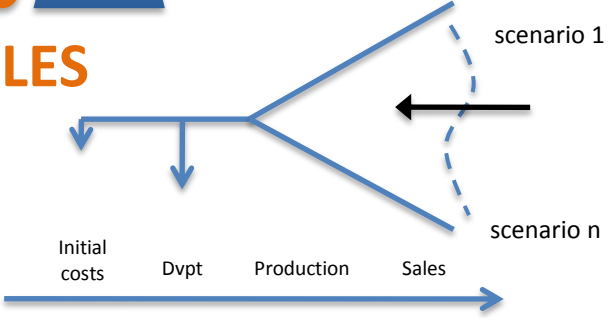


Methodologies: Past, Present, Future-Rooted



MULTIPLES

REAL OPTIONS





Cost Approach

Approximates the IP/Technology by the **costs** of replacement/creation of equivalent IP/Technology

- Generally R&D costs and patent filing related costs

Correlation between costs and value is generally highly questionable

- Wholly disregards the uniqueness of the IP/Technology
- Does not reflect the evolution of the environment: time-lag effects
- Does not reflect earning power of IP/Technology and ultimate market share

Utilized whenever replacement is possible, and if not generally useful in case there is no other available data

- **More adapted to Early Stage development IP/Technologies**



Market Approach

Parallels the subject intangible asset with comparable or similar intangible assets that have been sold or listed for sale

- Difficulty lies in comparability
- **More adapted for mature and fully developed technologies**

Multiple Index approaches rationalize comparability

- Patent family size
- Citations analysis, technical coverage
- Geographical coverage, legal strength
- Market attractiveness

Comparisons are at best as good as the transactions database is....



Revenue-based Approaches

Identifies the value of the assets with that of the future revenues derived from it

- Means a reasonable business plan exists
- **Thus adapted for technologies close to market**

The most common approaches are based on Discounted Cash Flows

- Implies estimating the **probable** incremental cash provided by the asset
 - Royalty, Incremental margins (Sales increase ad/or cost savings)
- Implies to assess the part of revenues strictly linked to the IP/technology/IP

Real Options approaches integrate explicitly probabilities and revenues in a dynamic way



Discounted Cash Flow – The basics of NPV

- NPV reflects the way you consider cash flows and allows to choose between alternatives such as: take 100€ today or wait 1 year to expect 115€ ?
- The main parameters impacting NPV are:
 - The expected useful life of the asset
 - The variation of yearly cash flows (e.g. royalties), namely their growth rate
 - The discount rate, capturing both future risks and value of money

Parameter		Impact on NPV
Useful life	↗	↗
Royalty Rate	↗	↗
Growth rate	↗	↗
Discount rate	↗	↘↘



Orders of magnitude and variability for a perpetuity (infinite useful life)

Sales 100 M€/y					
Royalty Rate	Discount Rate				1% DR impact
		9%	10%	11%	-13%
	4,0%	67 €	57 €	50 €	
	5,0%	83 €	71 €	63 €	1% Royalty impact
	6,0%	100 €	86 €	75 €	22%
Growth Rate	Discount Rate				1% DR impact
		9%	10%	11%	-12%
	2,0%	71 €	63 €	56 €	
	3,0%	83 €	71 €	63 €	1% Growth impact
	4,0%	100 €	83 €	71 €	18%

Only considering $\pm 1\%$ on Discount Rate, Royalty Rate or Growth Rate implies $>\pm 15\text{M€}$ uncertainty on the 71M€ central value:

- One has to live with uncertainty
- The valuator's expertise to reduces this uncertainty by defining the right parameters, following a rigorous and replicable process



Royalty Rates

- Most generally : benchmark from databases – a specialist job
- Many issues
 - Comparability of benchmarks
 - Read agreements
 - Rejection process
 - Stacking issues for complementary technologies
- Need to be commensurate with business performance
 - 20-30% of EBIT rule
 - No standard



	Average	Median	1 st Quartile	3 rd Quartile	Maximum	Minimum	Count
Chemicals	4.9%	4.5%	2.5%	5.5%	40.0%	0.1%	181
Internet	16.6%	12.5%	5.0%	24.1%	80.0%	0.3%	408
Telecom (excluding Media)	6.4%	4.5%	2.3%	6.5%	50.0%	0.0%	187
Consumer Goods, Retail & Leisure	5.9%	5.0%	2.8%	7.0%	40.0%	0.0%	313
Media & Entertainment	9.8%	5.5%	2.8%	10.0%	80.0%	0.1%	85
Food	5.8%	4.0%	2.5%	5.5%	70.0%	0.3%	133
Medical & Health Products	5.9%	4.5%	2.5%	6.8%	80.0%	0.0%	939
Pharmaceuticals & Biotechnology	7.7%	5.0%	2.5%	9.0%	90.0%	0.0%	2,655
Energy & Environment	5.9%	4.5%	2.5%	7.0%	75.0%	0.1%	495
Machines & Tools	5.9%	4.3%	2.8%	6.3%	50.0%	0.5%	141
Automotive	5.1%	4.3%	2.5%	6.0%	30.0%	0.5%	142
Electrical & Electronics	4.7%	4.1%	2.5%	5.5%	25.0%	0.1%	220
Semiconductors	5.0%	3.9%	1.9%	5.5%	50.0%	0.0%	144
Computers & Office Equipment	5.4%	4.0%	2.3%	6.8%	30.0%	0.2%	133
Software	14.0%	9.0%	4.5%	21.0%	77.0%	0.0%	491
Summary	7.8%	5.0%			90.0%	0.0%	6,667



Discount Rates – KEY ISSUE

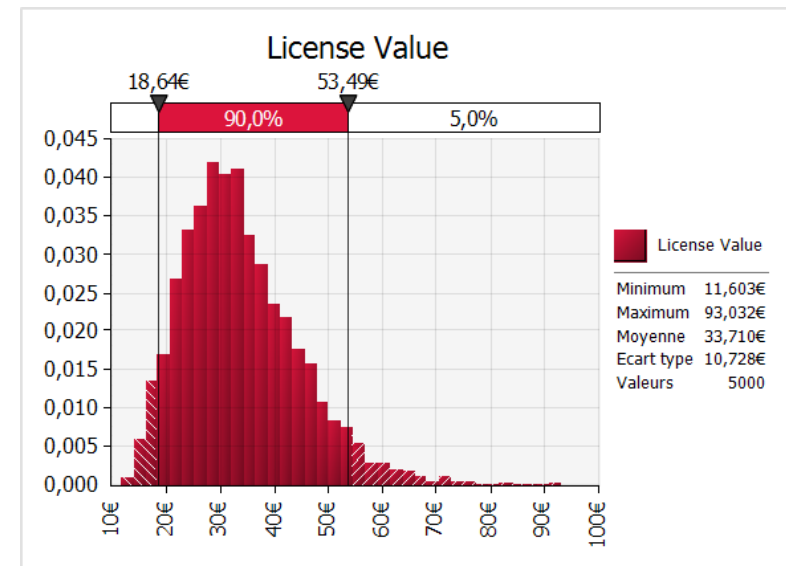
- **Discount rates must capture the risk profiles of cash flows**
 - Databases provide estimates
 - No real consensus
- **Some models exist : example Capital Asset Pricing Model (CAPM)**
 - **Assumes linear relationship between market behaviour and asset risk**
 - **Discount Rate = Low risk D.R + Beta x Risk Premium**
 - **Beta = covariance of market and cash flow volatility**
- **There is room for new theories; LESI IPV Committee will be part of the effort**



Let us be provocative – simulating a license value

	Base Case	Simulation	Min	Peek	Max
Net sales first year	100	100	80	100	120
yoy Growth rate	3%	4%	1%	3%	10%
Royalty Rate vs. Net Sales	5%	6%	3%	5%	10%
Duration	10	11	5	10	15
Peers WACC	10%	10%	8%	10%	12%
Technology Risk Premium	1%	3%	0,5%	1,0%	5,0%

Simulation of 5000 Scenarii
 (« Monte Carlo »(*))
 License Value lies in a range
 15M€ - 50 M€



(*): using MS Excel plug-ins, create 5000 scenarii choosing randomly parameters in the given variation range



Real Option Valuation and Reasoning (ROV & ROR)

The value is that of the right but not the obligation to exercise an option

- The RO Approach allows the recognition of flexibility and of multiple outcomes
- **A vision of the possible outcomes is required**

Based on Black and Scholes or a lattice model in discrete time.

- Implies that the decision to invest is **reversible**
- Rejects determinism but a diffusion processes must be specified
- Also relies on a business plan and on DCF as proxy of the underlying asset value, i.e. requires discounting rates

ROR allows dynamic projections and multiple scenarios, and reduces the power of assumptions

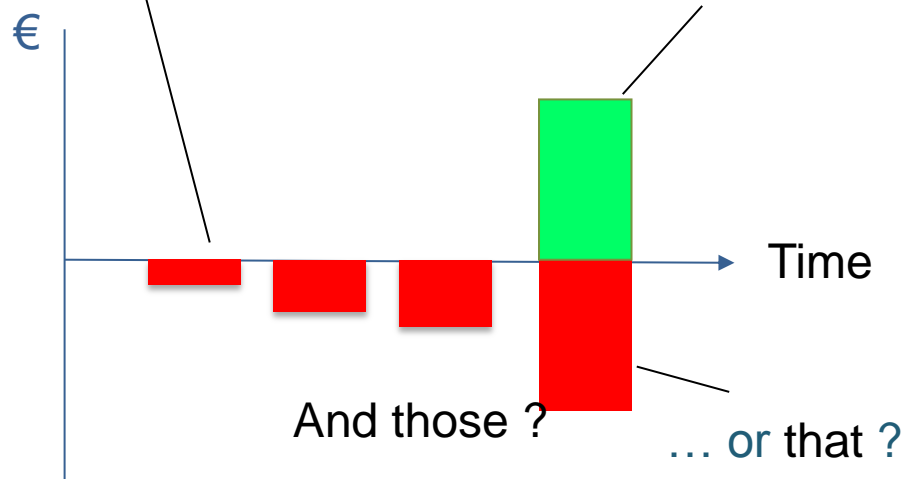


REAL OPTIONS APPROACH

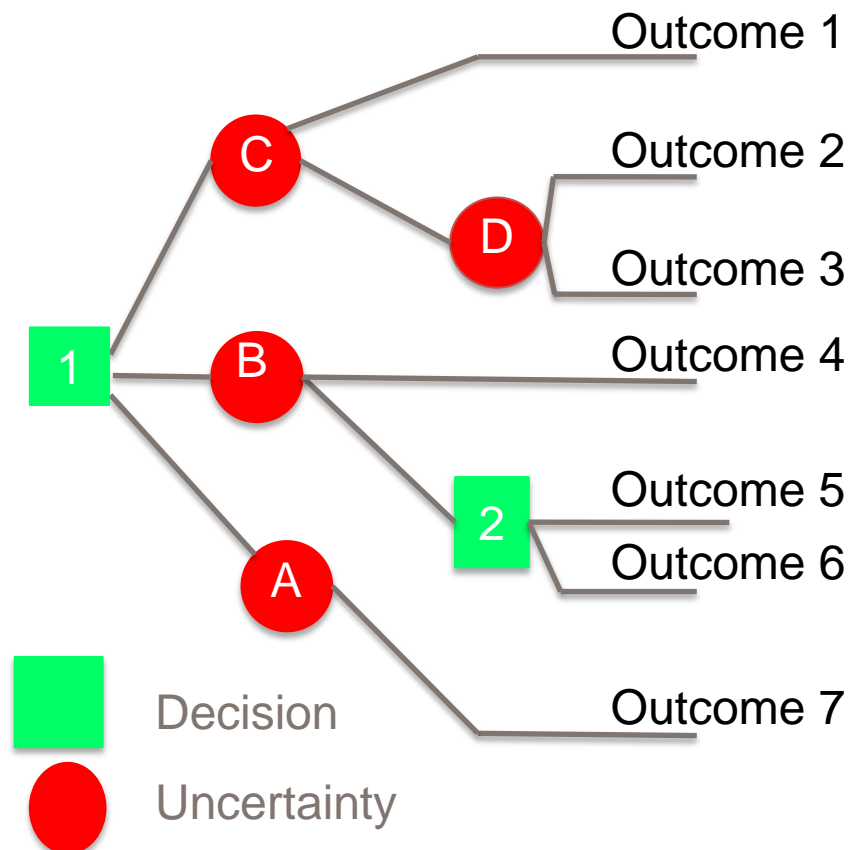
TIME IS ON YOUR SIDE – ALTERNATIVE PATHS

Should I spend this.....?

... to know if I shall earn this....



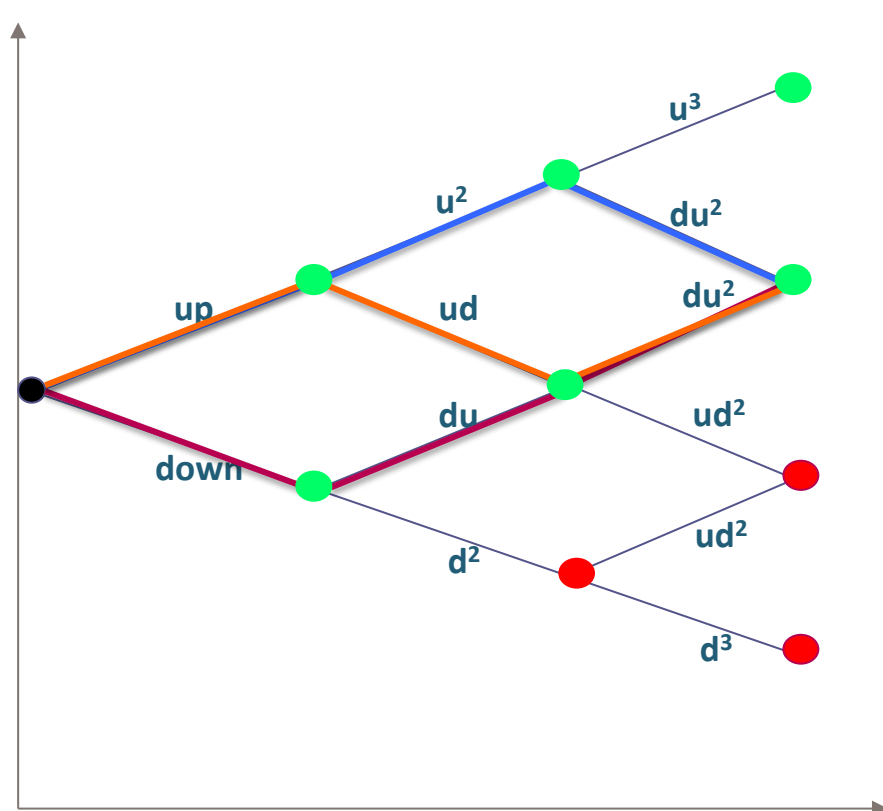
TIME + CHOICE = VALUE PREMIUM



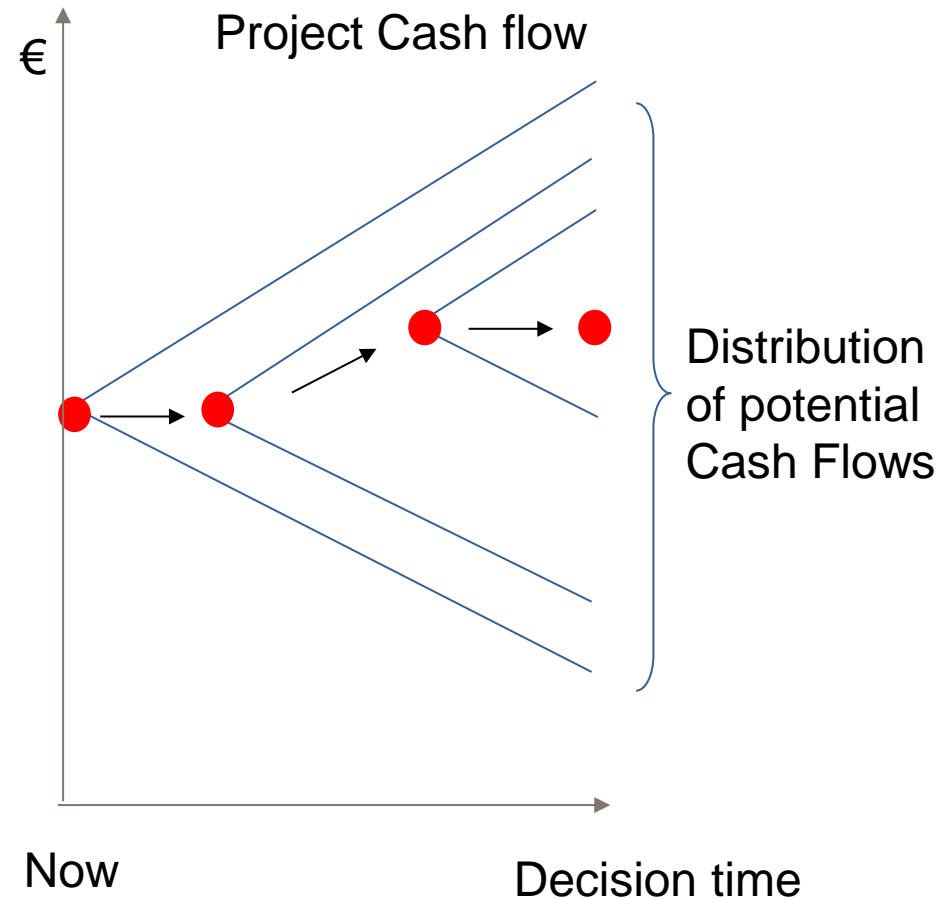


REAL OPTIONS APPROACH

Time reduces uncertainty – One value, several paths



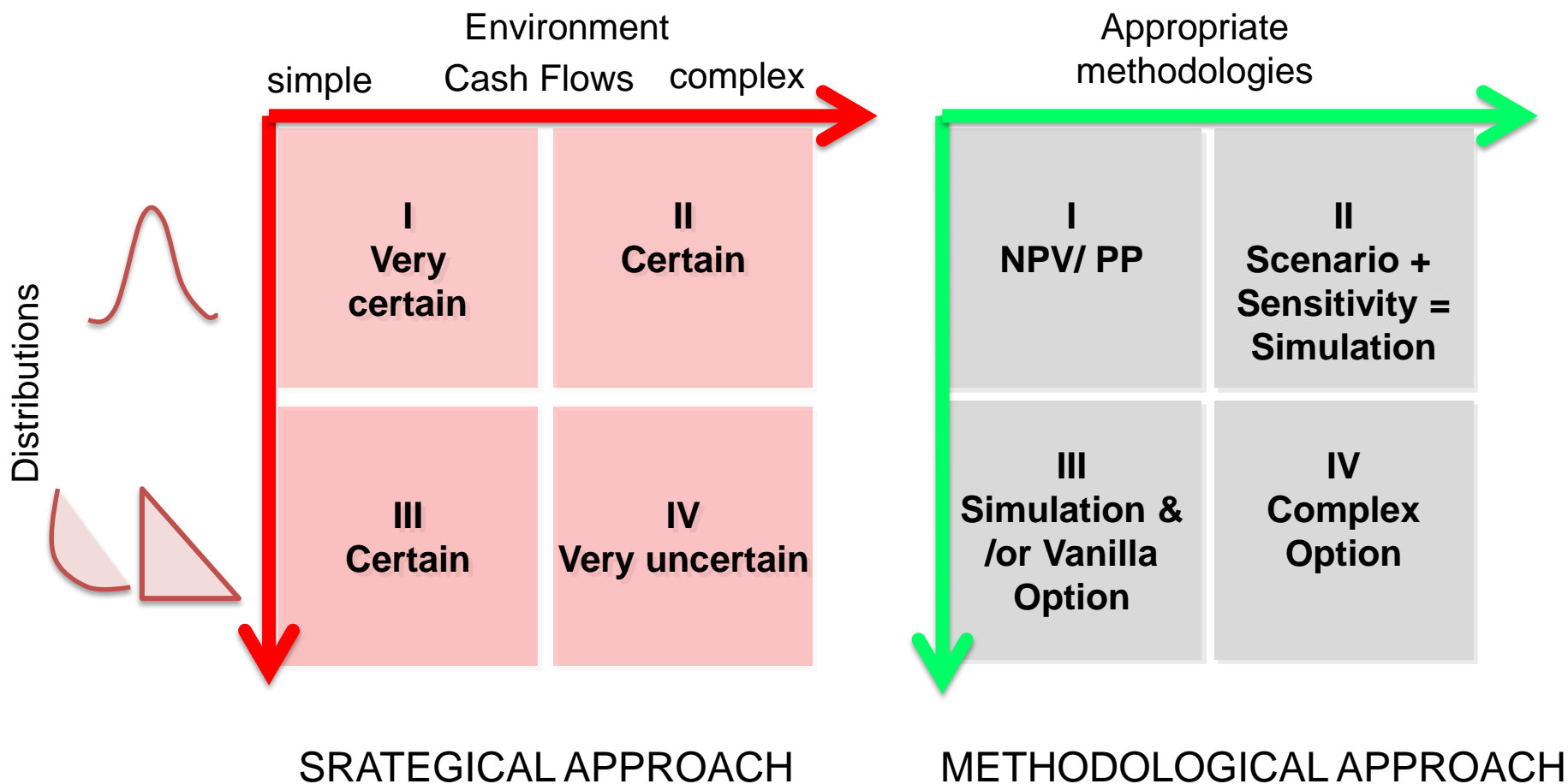
Extended project value
=
NPV+ flexibility (option)





REAL OPTIONS APPROACH

One size doesn't fit all : a quadrant approach





IP Valuation Committee – Our Path Forward

- **Our organization:**
 - **Operational Committee : steers and animates the WW IPV Committee**
 - A. Gorius – France (Chair), Martha-Laura Lopez – Mexico (Co-Chair)
 - Vice-Chairs: A. Chaouat – France, P. Ewbank – Belgium, K. Gala (Asia Pacific), A. Nestler – Germany, A. Vestita – Italy
 - **Worldwide LESI IPV Committee: do not hesitate to join us**
- **Our Roadmap**
 - **Priorities 2018-2019:**
 - Education and communication around methods; provide access to tools and literature references; webinars with recognized specialists
 - Provide access to specific licenses/royalty: Case studies
 - **Deliverables 2018-2019**
 - ToolBox – in coordination with local LES Committees
 - Best Practices – publication in Les Nouvelles
 - Case studies / specialized webinars