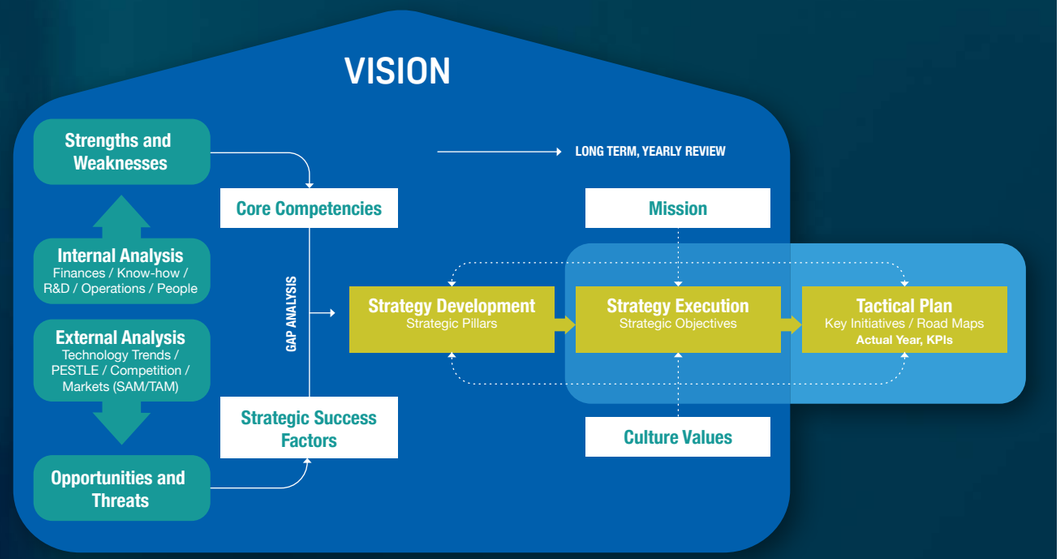

Figure 1: Evatec's Strategy Process

Strategy in Action

Senior Strategic Marketing Manager, **Maurus Tschirky**, introduces and illustrates the Evatec strategy process in action through some typical examples. It drives our activities in the medium and long term whilst still maintaining short-term flexibility, allowing us to adapt to challenges and opportunities in the market.

The process itself – in a nutshell

When asked about a contribution relating to Strategic Marketing and Business Development, the first dilemma was how to put down something of broad interest to readers of LAYERS without going into endless process details or sharing strategic plans intended for internal consumption only... but hey, aren't we here for making possible what seems to be hard at first sight?

So, rather than elaborating the whole Strategy Process per se and losing the reader's attention within 10 seconds, my focus here is more on reporting its impact. I intentionally don't touch the many workshops and methodology applied but hope that the single sketch about the Strategy execution in Figure 1 explains the essential parts of our process.

I then showcase two examples to illustrate the outcome of a lot of work carried out behind the scenes.

It starts with the company vision. Then as in any strategy process, there follows a thorough analysis of the status quo both internally and externally. The outcome generally answers the questions about what we ARE able to do in comparison to what we NEED to be able to do. The identified gaps represent the playing field for the Strategy Development.

The general directions are defined here, with the clear purpose of serving as guidelines for the detailed items within the Tactical Plan. Any activity therein must follow the general direction and contribute to the overall goals. We are aiming to create an environment that is agile and flexible to adapt to the market's needs. "Strategic Marketing and Business Development" very much go together.

While the internal analysis is often rather straight forward, the external factors appear ever more complex – most prominently represented by the currently unpredictable and erratic geo-political turmoil. Make no mistake, the SEMI Industry is probably the most globalized eco-system you can find. Without global contribution, participation and free trade, this industry would not be where it is today.

At the same time, the market creates certain positions of strength and power, clearly resulting in dependencies. The widespread use of thin film technology gives rise to a heightened awareness of the strategic opportunities of being able to tap into the supply of semiconductor devices. However, localization, various 'Chip Acts', countless regulations and restrictions might even pave the way for the establishment of competing spheres.

The situation is consequently very complex, and things can also happen outside our range of influence, with either detrimental or beneficial effects.

Continuously assessing the latest developments is therefore essential and that's exactly what we do in regular reviews. What therefore might come across as straight forward and utterly logical is, in fact, much more complicated than at first glance. Human factors and company culture both have a huge influence on the outcome of this highly dynamic process which takes place under the umbrella of the company vision, values and management principles.

Our process recognizes both the need to remain agile for the short-term, whilst being persistent on activities for the mid- and long-term. The big picture lasts longer and enables major developments and programmes over several years, whereas the Tactical Plan defines the Initiatives and KPIs for the actual year. But let's leave the theory behind and introduce two real examples of our Strategy Execution:

Market Segments	MEMS	Wireless	Power	WLO
Materials	AlN, AlScN, PZT, KNN	AlN, AlScN, SiGe, $LiNbO_3$, ($LiTaO_3$)	GaN	$LiNbO_3$, $BaTiO_3$
Properties		Highest crystallinity, quasi-epitaxy for all materials		
Seeding	t.b.d.	t.b.d.	Hot AlN buffer	$SrTiO_3$ for BTO
Material Class		'Functional Ceramics' (Wurtzites, Perovskites, ...)		
Hardware Features		Temperature, Low Energy Impact, Seeding		

Figure 2: Evatec breakdown of requirements, hardware and processes

1. An EPIC* story out of the Internal Analysis

We start with an important activity that has its roots in the deep-dive analysis of our core competencies – the internal analysis. A growing number of requests and needs from various market segments appeared to reveal certain similarities. From Gallium Nitride (GaN) in Optoelectronics and Power Devices, to Lithium Niobate (LNO) and Aluminium (Scandium) Nitride (Al(Sc)N) for Wireless and Photonics, Barium Titanate (BTO) for Photonics, we recognized the general need for highest crystallinity of a somehow related class of materials (Figure 2).

Luckily, we have dealt with some of those materials for two decades already. Piezoelectric effects have been at the heart of our success in MEMS and Wireless applications over years, with ferroelectricity now opening new applications and electrooptic properties gaining momentum due to the growing importance of Photonics in the industry. These properties and characteristics, often called multiferroics, are at the very heart of functional materials with regards to transducing one physical quantity into another one.

Many of those materials require particular hardware and process control features in our systems to achieve the specified properties. That's what we have been developing so far and continue to develop as part of our long-term strategy.

Footnote: EPIC is an acronym combining the words Epitaxy and Photonic Integrated Circuits.

2. External view allows for reaching the sky in Frontend Integration

It is from constant exposure to customers and comparison with competition that we recognized the trend for ever smaller feature sizes and thus the evolution of the 3rd dimension in our customers' devices.

Apart from the very specific technology developments demanded by individual market segments, we also recognized the needs for "pure play" technology which they all might leverage if we could provide answers to capabilities including trench fillings, via coverages and liners.

An entire program for 300mm Frontend Integration (see article page 42) was therefore created to ensure Evatec remained "on the front foot" for supporting 3D-structures. This was not an application or device. It was an enabling technology that appeared across multiple markets. This program therefore has at its core the goal of providing "building blocks" and a portfolio of solutions that can be tailored to the need of individual customers.

The term 3D Heterogeneous Integration not only includes but also describes both axes contributing to what the community rightly calls the "Essentials", (Figure 3).

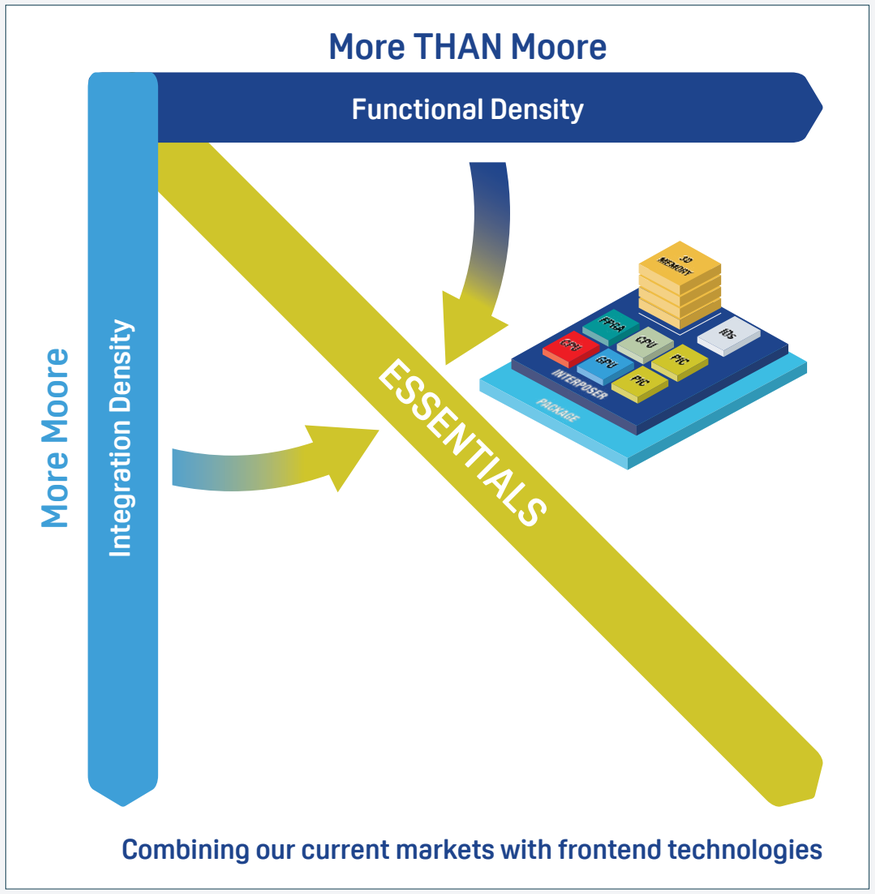

Figure 3: The Big Picture – Innovations for future chips.

It's a balance

These two examples illustrate a subset of conclusions we drew out of the initial Strategy Process. Where the EPIC story comes out of an internal perspective, 300mm Frontend Integration originates in the continuous observation of the market and technology developments. We implemented these findings into our roadmaps and long-term planning whilst still remaining flexible and agile to any emerging customer needs in the shorter term.