HOW EMOTIONAL INTELLIGENCE IS DRIVING IMPROVEMENTS AND MEETING THE CHALLENGES IN PULMONARY DRUG DELIVERY

In this article, Howard Burnett, Vice-President, Global Account Management, & Head of Global Pulmonary Category at Aptar Pharma, explores how emotional intelligence can foster partnerships that have the potential to drive advances in understanding and improving patient outcomes, and presents the case for a single-source, turnkey approach to pulmonary solution development.

Everyone who works in the pulmonary drug development space recognises what a complex subject it is, comprising several interconnected disciplines that, right now, aren't actually connected. This is simply because, to date, there hasn't been one partner that can offer the breadth of experience and the depth of expertise needed by pharmaceutical clients.

Add to that the present challenge of switching propellants from the currently used hydrofluoroalkanes (HFAs) to newer, more environmentally friendly alternatives, and the pulmonary drug delivery space looks even more fragmented and tricky to navigate.

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As a market leader in respiratory drug delivery device solutions, Aptar Pharma has addressed these challenges head on. Aptar recognises that the only sustainable way to connect the disciplines involved in pulmonary drug device development and overcome the sector's difficulties is to begin with an evolution in culture and behaviour that drives continuous improvement. Aptar is committed to an open, trusting and collaborative partnership approach to solving the challenges of reduced environmental impact and improved patient outcomes.

COMPLEX SKILL SETS TO ANSWER COMPLEX CHALLENGES

The most successful innovation journeys begin by addressing an unmet patient need. However, in pulmonary drug development, the pathway from here to there is far from straightforward. From API development and deposition modelling to device design and regulatory approval, there is a series of interconnected stages that must be aligned and balanced in order to arrive at the ultimate goal: delivering a safe and

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effective product to market quickly and economically, all while reducing risk.

Within this competitive context, with its fine margin between success and failure, there is also the need to respond to important external issues, ranging from climate change to covid-19. Answering these challenges requires a mix of the right skill sets and, while pharmaceutical companies will have core in-house competencies to varying degrees, it is a situation that encourages sourcing a range of technical capabilities and specialist expertise from supporting stakeholders.

If success is rooted in collaboration, Aptar believes it can only truly be unlocked through real partnerships that go beyond a project. There is a breadth of issues at play in the mature yet fast-changing pulmonary medication market. Therefore, finding solutions demands a relationship with the necessary depth and understanding, ideally one where all parties achieve more by synergistically working and sharing together; one where the whole is far greater than the sum of its constituent parts. In short, a relationship where 1+1 > 2 (Figure 1).

DEFINING THE RELATIONSHIP

Great partnerships – both personal and professional – are always admired. In business, this reflects the fact that they can be difficult to cultivate, since at their core there is traditionally a client/supplier dynamic that may not be truly balanced. So, what are the qualities that make for a genuinely successful partnership? Do they represent more than a simple client/supplier dynamic? Should success be defined purely by contractual obligations and transactional exchanges?

With the potential for a range of answers to these questions, it is easy to see how the idea of a partnership remains open to interpretation and, in turn, how there is a very real risk of two parties being engaged in a relationship where they are misaligned in terms of culture, values, objectives and behaviours. Such mismatched relationships can be breeding grounds for miscommunication and potential friction, causing what would be otherwise simple project obstacles to escalate into more significant barriers that inhibit success.

Aptar Pharma believes that the nature of today's pharmaceutical market means that a true partnership approach is fundamental to successful drug development. By sharing the same objectives and being emotionally and intellectually invested in each other's success, innovation and productivity really can flourish. And, by embracing true partnership, processes can be accelerated, focus and control can be maintained and demonstrable progress can be realised.

THE SECRET TO PARTNERSHIP SUCCESS

A key ingredient for facilitating success is for both parties to bring a higher degree of emotional intelligence (EQ) to the table. EQ acts as a catalyst for introducing the desired parameters of clear communication, openness and mutual trust. The concept of EQ was first defined by scholar Joel Davitz and clinical psychologist Michael Beldoch in their 1964 book "*The Communication of Emotional Meaning*" and was later popularised by journalist Daniel Goleman in "*Emotional Intelligence*", a 1995 international bestseller.

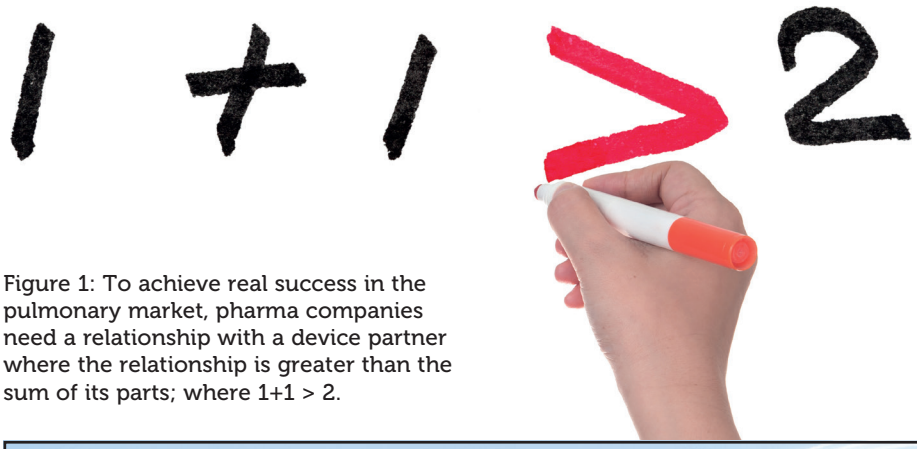

Figure 1: To achieve real success in the pulmonary market, pharma companies need a relationship with a device partner where the relationship is greater than the sum of its parts; where 1+1 > 2.

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EQ primarily refers to an individual's ability to recognise emotion in themselves and others, and to use that information to help guide their thinking and behaviour, adapt to environments, and achieve certain goals (Figure 2).

These are qualities we typically associate with people, but organisations also have the potential to display EQ in the context of a partnership. This is particularly true in companies whose collective values and behaviours manifest themselves in an identifiable organisational culture that not only guides internal decision making and influences how employees interact with others, but also shapes how the business responds to market forces. Aptar prides itself on having such a programme, called "Organizational Effectiveness Development" (OED), which helps drive and guide the company culture across a variety of themes important to the company's relationships, such as leadership, collaboration and communication.

Within pulmonary drug development, the influence of a product's environmental impact is becoming ever more significant. Growing awareness of climate change has driven legislators to implement guidance and regulation aiming to push the industry towards greater environmental sustainability, and stakeholders within the supply chain to place increasing emphasis on the development of products with a lower global-warming potential (GWP).

WORKING TOGETHER ON CARBON REDUCTION

A major milestone in this journey was the signing of the Montreal Protocol in 1987, which phased out the consumption and production of chlorofluorocarbons (CFCs), which are known to be both greenhouse gases and harmful to the ozone layer. Given the dominant position of CFCs as a pressurised metered dose inhaler (pMDI) propellant, this demanded an immediate recalibration by the pharmaceutical industry towards hydrofluoroalkane (HFA) propellants. As such, the first HFA-based salbutamol product was launched in the UK in 1995.

Today, with the manufacture and sale of CFC-based products now banned entirely, attention has turned to the carbon impact of the broader collective group of fluorinated gases (F-gases), which includes HFAs. This presents the industry with the next challenge in its carbon-reduction journey.

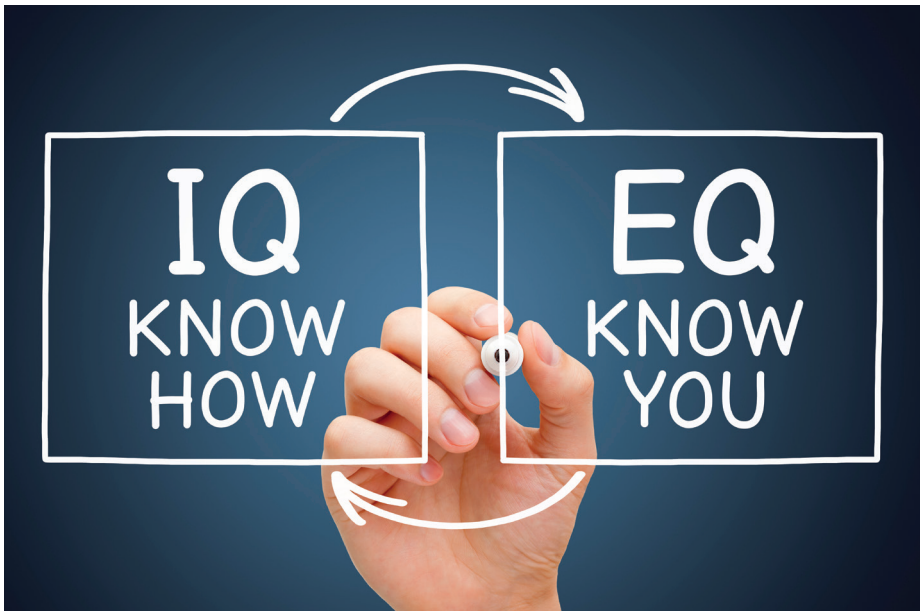

Figure 2: Whilst the value of a potential partner's technical "know-how" is very well established in the pharma industry, it is also important to find a partner with the emotional intelligence to understand and gel with a pharma company's culture and values, to have the "know-you" factor.

"Building a more sustainable future for pMDIs by transitioning to more environmentally friendly propellants, such as HFA152a, is a top priority for Aptar Pharma."

Therefore, there is a continuing exploration of alternative options, such as HFO 1234ze and HFC 152a (1,1-Difluoroethane), whose promise as a pMDI propellant must be balanced with available data on its safety.

In the wake of the Kigali amendment to the Montreal Protocol in 2016, more than 60 countries across the globe are committed to a managed phasing-down of hydrofluorocarbon (HFC) gases. In addition, the member states of the EU are aiming to cut F-gas emissions by two-thirds by 2030 compared with 2014 levels.[1] While the long-term environmental benefits are clear, these deadlines will have short-term implications that require an EQ response from companies that understand each other, value each other's contribution and have a shared vision of what success looks like.

SUPPORT FROM DESIGN TO COMMERCIALISATION

Successful partnerships are crucial for pharmaceutical companies looking to overcome this significant challenge. It requires a partner with pulmonary delivery expertise that might begin simply with elastomers and valves, but whose competencies extend into the far reaches of a complex process, incorporating formulation science, device design, testing and regulatory approval. There is a requirement to work side by side, with existing in-house capabilities complemented by a partner with an end-to-end service offering that encompasses all the required aspects to manage the device pathway and optimise lifecycle management.

Building a more sustainable future for pMDIs by transitioning to more environmentally friendly propellants, such as HFA152a, is a top priority for Aptar Pharma. The company is bringing its partnership philosophy to pharmaceutical organisations in pursuit of this shared objective, drawing on the strength of its research and development laboratories and filling capabilities in Le Vaudreuil (France). Aptar's collaborative work with clients and companies, such as fluoroproducts specialist Koura, is focused on screening Aptar Pharma metering valves across multiple model formulations and optimising new valve configurations. It has shown that the distinct properties of HFA152a, such as its low liquid density, are not an obstacle to working with suspensions.

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RISING TO RESPIRATORY CHALLENGES

Carbon-reduction strategies are not the only area where partnerships driven by EQ and innovation are addressing needs in the pulmonary space. Respiratory diseases continue to present a major threat to global health; more than one billion people suffer from either acute or chronic respiratory conditions. Chronic obstructive pulmonary disease (COPD), asthma, acute lower respiratory tract infections, tuberculosis and lung cancer are among the most common causes of severe illness and death worldwide.[2]

For many of these diseases, their health burden is on the rise, placing greater urgency on the need to develop therapies that can ease suffering among patients. Inhaled drug delivery devices present several major advantages in addressing these unmet needs, such as improved compliance, the ability to provide high drug payloads with targeted delivery and the possibility of minimising associated packaging. Aptar Pharma's expertise in this area was further enhanced following its acquisition of Nanopharm in 2019, a move that introduced SmartTrack™ to Aptar's offering to help both de-risk and accelerate the pathway for orally inhaled and nasal drug products (OINDP).

The perennial challenge of better assuring patient adherence and compliance to medication regimes continues to be addressed with the accelerated adoption of digital health solutions – an area where Aptar has been at the forefront for several years, now having integrated and add-on devices available for a range of pMDI technologies. The recent acquisition of Cohero Health, a digital therapeutics company transforming respiratory disease management for asthma and COPD, further reinforces Aptar's drive to improve respiratory care, reduce avoidable costs and optimise medication adherence.

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HOW EQ DRIVES RETURN ON INVESTMENT

Given the prioritisation and fast tracking of covid-19 treatments, even greater value is now placed on having robust relationships with reliable, knowledgeable partners who can help jointly overcome development hurdles and accelerate safe products to market. At the same time, the more cynical may ask, "What's in it for me?" The philosophy of a closer partnership approach may be advocated by a supplier, but some clients will rightly question whether moving from the transactional to a more multi-dimensional relationship delivers tangible positive outcomes.

In Aptar's experience, the benefits are clear. The company fosters a culture that encourages and attracts people with a level of EQ that enables Aptar to forge strong and successful partnerships. As a result, Aptar has enjoyed a solid, decades-long relationship with one of the world's most successful pharmaceutical companies, and the value creation derived from the shared approach has been consistently impressive.

Together, the companies have enabled and de-risked projects in much shorter timeframes, whilst developing valuable IPs. They have created solutions for unmet patient needs, developing delivery solutions for a range of payloads in a wide range of therapeutic areas. Furthermore, they have built a 360° data lake that shares intelligence and insight to support the culture of continuous improvement. All this with a consistent defect rate of just 0.02% in the hundreds of millions of devices Aptar delivers every year.

Aptar firmly believes that the trend towards more sophisticated, deep-rooted partnerships is set to continue. For Aptar, two-dimensional supply-and-demand agreements must evolve to become three-dimensional, multi-layered collaborations to manage the increasingly complex, interconnected landscape of pulmonary drug development. For pharmaceutical companies, the challenge is not only in finding a partner with the right capabilities, but one with the shared ambition and emotional intelligence to ensure both parties succeed together.

ABOUT THE COMPANY

For pharma customers worldwide, Aptar Pharma is the go-to drug delivery expert, providing innovative drug delivery systems, components and active packaging solutions across a wide range of delivery routes including nasal, pulmonary, ophthalmic, dermal and injectables. Aptar Pharma Services provides early-stage to commercialisation support to accelerate and de-risk the development journey. With a strong focus on innovation, Aptar Pharma is leading the way in developing connected devices to deliver digital medicines. With a global manufacturing footprint of 14 manufacturing sites, Aptar Pharma provides security of supply and local support to customers. Aptar Pharma is part of AptarGroup, Inc. (NYSE:ATR).

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Working daily to improve the health of our patients and our planet

As the market leader in pMDI valve technology for asthma and COPD, Aptar Pharma is committed to improving the environmental impact of our products and ensuring our devices are safe and effective.

That's why we are actively engaged in defining the next generation of pMDIs, finding more sustainable solutions with alternative propellants that align with our sustainability commitments as well as those of our partners and their patients.

To find out more about how Aptar Pharma is advancing pMDI technologies, please visit **www.aptar.com/pharmaceutical /delivery-routes/pulmonary/**

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