Research Brief

Resolving the Innovation Paradox of MedTech Procurement: Five Lessons from Research Outcomes

Medical technology procurement policies often seem designed to prevent the efficiency improvements they are intended to achieve. Research by EHTI is looking at ways to remedy this contradiction.

As healthcare systems strive to improve cost-effectiveness, recent research by EHTI[1] has revealed a paradox in medical technology procurement trends. On the one hand, health systems are centralising procurement and controlling prices in order to reduce unit costs(1). On the other, those actions seem to hinder the introduction of new technology that offers the best hope of improving healthcare system efficiency(2). Payers and providers seem to be stuck in the logical fallacy that cutting short-term costs is a step towards long-term cost-effectiveness. EHTI has been examining what the research literature tells us about the uptake of new medical technology and how it might help medtech companies overcome this problem.

Incremental or Radical Value?

The first lesson to grasp is that incremental and radical innovation create different kinds of value(3). The former tends to create short-term value, usually through reducing cost or increasing efficiency. The latter is associated with longer-term value by enabling new treatment regimes, which leads to payer's fears about healthcare inflation(4). Radical innovations tend to be adopted more slowly than incremental innovations because the mechanism of new product adoption differs. Incremental innovations may be able to by-pass formal evaluation processes and get in by the "back-door". By contrast, radical innovations almost always face careful scrutiny, which means that an understanding of the adoption process becomes critical, as we discuss next.

Diffusion or Situated Learning?

The second lesson concerns the adoption process. Medtech companies usually use the Key Opinion Leader concept(5) to understand new product uptake. Yet, as another EHTI researcher has described, the 50 year-old diffusion of innovation model is based on consumer market research and has little supporting evidence in markets where the customer is a healthcare system(6). In fact, the basic premise of the model, that individual users "copy" influential peers, seems flawed in modern medical technology markets where the decision lies in

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[1] The European Health Technology Institute for Socio-Economic Research (www.ehti.info) is an independent research institute whose remit is to develop data and evidence on the social and economic value of medical technology and its impact on the economy and welfare of European countries.

the hands of a complex group of users and purchasers. For example, EHTI research into the effect of financing on technology diffusion indicates that the behaviour of healthcare providers is complex and not related simply to reimbursement[7]. However, a new concept, the Communities of Practice model, is emerging[6]. It involves a phenomenon called "situated learning" in which the decision to change clinical practice emerges from the context-specific interaction of the team members. This new model is very different from the older paradigm and implies that the old KOL approach may be inappropriate in medical technology markets, especially in cases of radical innovation.

> "The innovation paradox is an unintended consequence of procurement trends in European healthcare systems. It is a problem that healthcare providers and payers will only solve with the help of medical technology companies."

Barriers or Channels?

The third lesson is that barriers to new-product adoption are understood and that this helps in overcoming them. Some see it as an issue of short-term vs. long-term efficiency[8] but it is a more complicated phenomenon than that. Researchers have identified no less than 24 barriers to change in healthcare systems[9], ranging from funding capital expenditure to conflict between departments. Barriers are often intangible, such as when boundaries between healthcare professionals hinder spread of ideas[10]. Further barriers to adoption tend to be very context specific, which implies that standardised "best –practice" approaches to overcoming them are unlikely to succeed[11].

Copy or Adapt HTA?

A fourth lesson is the problematic nature of Health Technology Assessment. EHTI researchers have noted that medical technology HTA often mimics processes developed in pharmaceuticals, even though medical technology differs from pharmaceuticals in several important ways[12], such as the difficulty of doing fully blind randomised controlled trials and the "learning curve" effects in medical technology usage.

It is therefore very important that medical technology HTA should not simply copy the approach of pharmaceutical HTA but should instead adapt it, allowing for the differences between them. Unfortunately, many of the international guidelines for HTAs show their pharmaceutical origins. As other researchers have pointed out[13], it is perfectly possible to adapt pharmaceutical HTAs in this intelligent way, but it might mean that other methodologies are more appropriate for HTA in medical technology.

Adopt or Sustain?

The fifth and final lesson concerns what happens after the initial adoption of an innovative medical technology, when acceptance stalls and does not lead to a sustainable change in practice.

The research literature finds that there are five reasons why the use of a new medical technology might not be sustained[3], ranging from the financial to the organisational to the technological.

These threats to the sustainable use of a new product are not mutually exclusive and any or all of them may act on a new product. Both users and providers are aware of these threats and, if they anticipate sustainability issues, may factor that into their adoption decision. So sustainability may hinder both initial adoption and continued use.

Real World Implications

The research described in the preceding sections, some of it published by EHTI researchers already[1;2;6;7;12], some of it the building blocks of their current research programme, is well-founded and has passed the test of peer-review. It forms an evidence-based foundation for overcoming the innovation paradox and has clear implications for management practice. Whilst each firm's response to the innovation paradox will have to be specific to its particular situation, the five key factors identified in the research can be translated into five general lessons for medical technology company executives.

1. Identify your value type

Inevitably, commercialising a new product innovation will mean communicating its value to its users and payers. No longer will it be sufficient to simply point out the product's technical features, advantages and benefits and expect the customer to infer the value to his or her patients or organisation.

The clarification that value can be short or long term and that incremental and radical innovations often lead to different kinds of value is an important insight here. It implies that medical technology companies can and should be crystal-clear about the kind of value their innovation brings. This in turn allows the company to understand better which decision makers to focus on and what messages to convey.

2. Manage Communities

As decision making power shifts from individual users to decision making bodies, it will no longer be appropriate to focus on Key Opinion Leaders and hope that they will diffuse the product into common usage.

The concept of Communities of Practice will become an important tool for medical technology companies in this context. It implies that companies should identify the Communities of Practice relevant to their product and work to understand and manage its group dynamics. This in turn implies different capabilities for marketing and sales teams.

3. Pre-empt Barriers

As cost-control grows in importance and true product differentiation becomes harder to achieve, it would be naive to expect that barriers to adoption will do anything but grow stronger. It will no longer be an effective tactic to train and enthuse the sales team and hope that their energy will overcome barriers to adoption.

The recognition that barriers to implementation are varied, often intangible and are context specific will enable firms to take a more proactive approach to overcoming those barriers. It implies that firms should, in advance of launch, identify the most likely and significant barriers and plan to overcome them.

4. Challenge HTA Approaches

Health Technology Assessments will only become more common, especially for more innovative products. In this environment, passive acceptance of the HTA agency methodologies will risk the inappropriate rejection of new technologies that could offer great value for healthcare systems.

The appreciation that many HTA approaches are based on pharmaceutical models and fail to address the differences between drugs and medical technology is important in this respect. It implies that companies should engage with HTA bodies and constructively criticise their methods. This in turn implies the need to develop new capabilities for understanding and working with HTA agencies.

5. Launch Sustainably

The commercial imperative to achieve not just initial adoption of new medical technology but sustained use will only become greater as development costs increase and product lifecycles shorten.

Given this need, the knowledge that sustainability is the result of numerous, interacting factors is valuable for the design of product launch plans. It implies that firms should, as part of their launch plans, evaluate the sustainability of their product and manage any threats and exploit any opportunities that the evaluation suggests.

SUMMARY

The innovation paradox, where efforts to control costs actually threaten the opposite, is an unintended consequence of procurement trends in European healthcare systems. It is a problem that healthcare providers and payers will only solve with the help of medical technology companies. EHTI's research is providing useful insights into the mechanisms of the problem. These insights are, in turn, providing practical direction to help medical technology firms solve the innovation paradox.

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