

From Idea to Product

In Bae Yoon

Nowadays recent medical activities have become more complex and diverse than those of 20, 10 or even 5 years ago. The concepts and methods of medical diagnosis and treatment have also changed conspicuously through scientific development. Hence, the previous concept of surgery was a wide operative field to supply a stable and accurate technique. However, minimal invasive or endoscopic approaches, keeping organs in situ, have been performed through a small puncture with visual magnification. These approaches, even for cancer surgery, are helpful in supporting more accurate treatment through a magnified operative field, and in preventing the postoperative complications. Therefore, minimal invasive or endoscopic approaches can result in ambulatory surgery or shorter admissions and reduce the economic responsibility of the patient.

One purpose of this lecture is to encourage physicians and scientists in all specialties to get involved in collaborative work for the purpose of developing new ideas and concepts to carry out practical techniques and procedures in the development of new drugs, devices, instruments and equipment for better quality patient care throughout the world.

The other purpose is to look for and nurture talented juniors in school, so that they can do their best individually and help one another through teamwork in research and clinics.

There are many physicians and scientists who have innovative ideas and concepts concerning realistic products and procedures in the medical community. I will try to outline some fundamental points in understanding how to effectively organize and transform these ideas and concepts into reality.

Based on my 30 years experience in developing new medical technologies in the United States, I have noticed that there are numerous difficulties in in-

roducing new techniques and procedures into the medical community due to unnecessary politics, as well as a lack of understanding and cooperation. Some solutions to these obstacles are presented in the attached diagram (Fig. 1).

Generally, I have observed that there are three groups of physicians and scientists. The first group consist of those who are pioneers, having innovative characteristics in their fields, seeking solutions of problems and necessity for research and development. The second group consists of those who are able to understand quickly and then teach the new techniques and procedures in their respective fields. The third group is those who are good at practicing and carrying out the techniques and procedures once they have learned them. However, innovation is not exclusive to the first group. Innovating and pioneering can happen in all three groups where there is an understanding of the steps involved in the process.

There is the well-known common expression that says, "problems and necessity are the mother of all invention". But in my experience, I say, "problems and necessity are the parents of all invention". The birth of an invention involves two parties, a mother and a father. This two step process begins with finding and understanding the problem, and follows with doing what is necessary to solve it. In other words, as a result of this conception or marriage of two factors-problem and necessity-a new innovation is created. If physicians and scientists recognized the importance of these two factors, then the possibilities for innovation could be expanded.

In order to encourage all groups of physicians and scientists to focus on endoscopy's new diagnostic and surgical procedures, I proposed to Dr. Byung Soo Kim, Dr. Kyong Sik lee, and other prominent leaders of the Yonsei University Medical Center, to develop a multispecialty endoscopic research and training center. With their strong support, this center was born in early 1998.

In order to carry out this program more effectively,

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Yoonitek, 11886 Farsude Road, Ellicott City, Maryland 21042, USA.

Address reprint request to Dr. I. B. Yoon, Yoonitek, 11886 Farsude Road, Ellicott City, Maryland 21042, USA. Fax: 410-992-7725, E-mail: ibyoon@erols.com

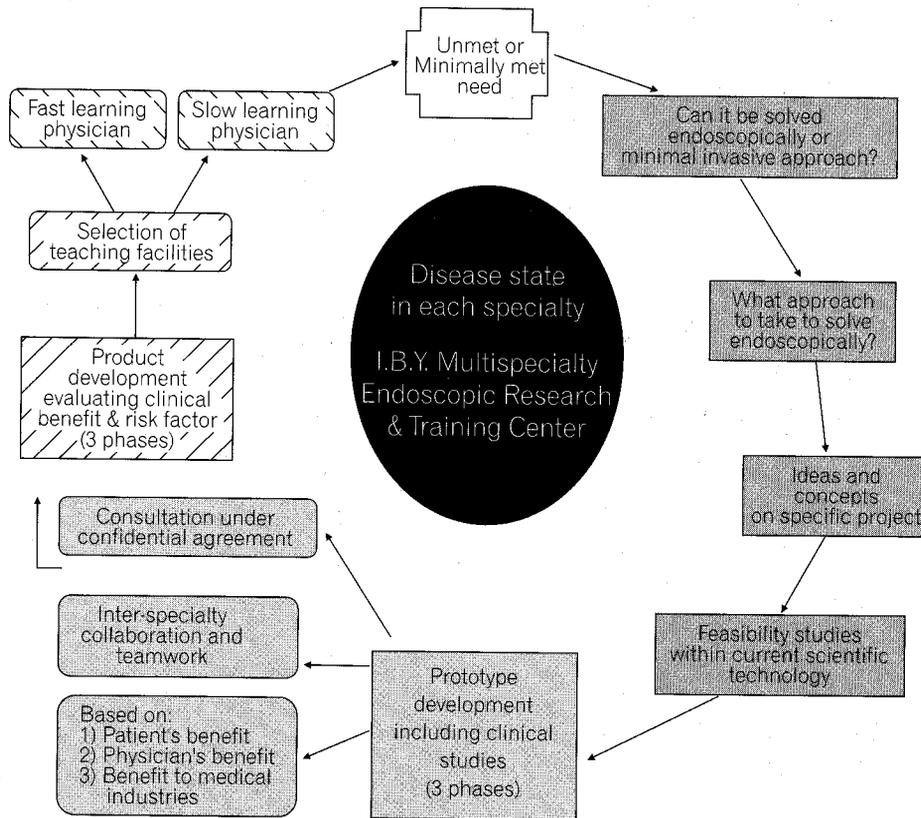


Fig. 1. Schematic diagrams for the development of new devices or procedures.

I suggest the following important issues:

- 1) Do not ignore any problem and/or necessary issue every day in your professional field.
- 2) Find the right people to consult with when solving your problem.
- 3) Be open and respect the opinions of inter-departmental specialties.
- 4) Evaluate the opinions for study itself or its product value. If it is marketable, investigate the market size.
- 5) Develop necessary steps to solve problems in your field with teamwork and display thinking.
- 6) Collaborate and communicate with reliable individuals who have had successful experience in the past.
- 7) Work with, not against, your colleagues when they offer criticisms, because their support is necessary to bring your ideas and concepts into reality.
- 8) Remember that any new idea and concept requires the right people, the right organization and right timing in order to have a successful outcome for better patient care.

9) Set up the protocol for technical procedures and proto-type development in three stages to reach the final workable product.

10) Don't forget all new ideas and concepts must be beneficial to not only patients, but also for physicians and scientists, as well as the medical industry.

11) All new ideas and concepts must be usable by any physician, even of below-average talent.

12) After the new technical procedure and product have been established, set up a teaching and patient care program for patients, physicians, scientists, and the medical industry.

Our paramount commitment is to our community. We are devoted to providing high quality, cost-effective care that delivers the best value to patients. We will accomplish this through integrated delivery of a multispecialty endosurgical center in association with internationally recognized teaching and research.

We have to provide the foremost technology and facilities, enhanced by healing skill, a sense of compassion and an abiding respect for human dignity.

We are further committed to providing leadership. We will maintain our emphasis on education and clinical research, so that we can contribute to the knowledge and well being of humankind.

Through the Yoonitech Research Institute, we hope to help innovative physicians and scientists not only within this institution but also throughout the entire Korean medical community.

SUGGESTED READINGS

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