OLYMPUS Investor Day 2018
Business Reforms and Innovation Technologies

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Agenda

- Progress of Business Process Reengineering (BPR)
- Innovation activities to react our risks
- OLYMPUS X (Cross) Innovation
1. Progress of BPR: R&D Productivity Improvement

Choosing development themes based on ROI etc./Proper resource allocation

1. Determine R&D budgets in top-down manner

2. Stringently manage conditions for selecting R&D themes based on stage-gate process

3. Optimize R&D expenditures for each theme

4. Evaluate priority of each theme

Choosing development themes based on ROI etc. / Proper resource allocation
1. Progress of BPR: R&D Productivity Improvement

Faster development through revision and enhancement of development process

[Current R&D process]
- R&D project
- Business plan
- Product roadmap

[New R&D process]
- R&D project
- Business plan
- Product roadmap

- Planning process
- Design process
- Functional verification process
- Volume production verification process
- Product certification process

Development rework occurs due to inadequate process and resource management

Stronger management of development (enhancement and standardization of development process, stronger PMO)

Enhancements to concurrent development practices
- R&D
- Manufacturing
- Quality, regulation, product registration

Support
1. Progress of BPR: Surgical Energy Devices  Examples of New Product Development

Two practices from the imaging business to be used in the development of disposable therapy devices

<table>
<thead>
<tr>
<th></th>
<th>Reusable products</th>
<th>Disposable products</th>
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<tbody>
<tr>
<td>Q: Quality</td>
<td>Emphasis on quality to withstand repeated use</td>
<td>Ensure quality appropriate to single-use product</td>
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<tr>
<td></td>
<td>Emphasis on durability and suitability for reprocessing</td>
<td>Ensure safe disposal as medical waste</td>
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<tr>
<td>C: Cost, manufacturing practice</td>
<td>Emphasis on added value and skills (craftsmanship)</td>
<td>Emphasis on cost, use of automatic assembly for volume production</td>
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<tr>
<td>D: Delivery</td>
<td>Emphasis on quality, establishment of product platforms for medium and long term</td>
<td>Short delivery times, time-critical product development</td>
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1. Progress of BPR: Surgical Energy Devices
   – Examples of New Product Development

Two practices from the imaging business to be used in the development of disposable therapy devices

This is how we do it here (Imaging business developer)

I’ll look into it straight away (Therapy device developer)

**Target 1: Reduce time and cost to produce final prototype**

(1) Initiatives for improving design efficiency
   [1] Improve design infrastructure
   [2] Adopt design quality delivery (DQD)
   [3] Improve how drawings are annotated

- 30% shorter lead time

**Target 2: Eliminate rework by reviewing product standards of final prototype**

(2) Initiatives for eliminating rework in review
   [5] Adopt interim characteristics charts
   [6] Start using problem reports

- 40% reduction in prototype cost
2. Innovation activities to react our risks

Establishing a Technology Innovation Office under the direct jurisdiction of the CTO (The organization consists mainly of several “Fellows” under the new HR system.)

- Extraction of innovation technologies
- Extraction of challenges and solutions
- Promotion of open innovations and academic-industrial alliance
- Risk analysis
- Provision of opinions to the top management
Concrete Efforts

1) environmental analyses:
   PEST/5P analyze
2) Extract innovation tech.
3) Risk analysis
4) Extract our Challenges/prioritize
5) Establish Strategic Option
6) Establish Action Items
7) CXO level decision
8) Call for alliance or open innovation

2. Innovation activities to react our risks
The Goals for “Making people’s lives healthier, safer and more fulfilling”

Pick up the “GOOD HEALTH AND WELL-BEING” and “SUSTAINABLE CITIES AND COMMUNITIES”
Three Frameworks

[1] Future of medical testing to protect way of life
   - Intelligent Sensing

   - Information Rich

   - Workflow
Targeted innovation

Future of Surgery
Future of Surgery

Safety

Reduce complications

Efficiency

Value

Shorten hospital stays

Avoid repeat surgery

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No data copy / No data transfer permitted
Surgery Innovation 1

Making laparoscopy less invasive than open surgery
Surgery Innovation 2

Advances in devices

Imaging
Surgical imaging

Surgery
Surgical energy devices
Surgery Innovation 3
Integration and robotics

Productivity

Precision
Surgery Innovation 4
Connectivity and information support
Information Rich

AI

IoT
Targeted innovation

Future of Endoscopic Examination
Number of Cancer Cases in Japan

Projected cancer cases up to 2029 (gastrointestinal)

Source: Cancer information service, reported cases and statistics (1975–2010), cancer_incidence (1975-2012), 2010–2029 cancer_prediction (2010-2029)

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Number of gastrointestinal endoscopic examinations in Japan (conducted under health insurance)

Rising trend in number of endoscopic examinations
Skilled endoscopists are in demand

No. of surgical treatments for gastrointestinal malignancies

Increasing use of sophisticated endoscopic surgery
Falling use of open abdominal surgery

Advances in endoscopy

- Higher image definition
- Enlargement
- Wide angle
- Passive bending
- NBI
- Variable stiffness

Images provided by Dr. Yasushi Sano of Sano Hospital
The FDA has issued safety communications about the risk of multidrug-resistant bacteria transmission via endoscopes.

In Japan, the Ministry of Health, Labor and Welfare has issued a notice based on the cases in the USA.
As the population ages, the number of endoscopic examination/treatment is growing.

Global cost pressure: Efficient endoscopic exam is required.

Demand of skilled endoscope physician is growing.

High demand of reaction for infection risk via the endoscope.
Future workflow in endoscope examination

**High Quality Wash / Sanitation process by ICT**
By providing the evaluation process or easy sanitation for reuse device, the device can be used safely.

**Ease the burden of preparation**
Even with residual remaining, MD expect high exam performance

**Insertion Navigation**
Even an inexperienced doctor can insert colonoscopy easily and deeply with technical assistance.

**Endoscopy Intelligent System**

**Self reporting**
The doctor can reduce the burden of work other than examination, such as report writing

**AI diagnose assistance**
Even an inexperienced doctor is expected to have high exam performance

**Advanced Therapy**
Implement various advanced treatments with a minimally invasive approach