Business Innovation Unit

Osamu Fujikawa, Senior Vice President
Overview of Business Innovation Unit

Mission / Goal

Create business to be pillar in the future

- Commercialize and monetize technologies of the Central Research Laboratories
- Explore business opportunities addressing social issues
- Accelerate value creation through “Co-Creation”

Process and Organizational Structure for Business Development

<table>
<thead>
<tr>
<th>Process</th>
<th>Generate</th>
<th>Ideate</th>
<th>Develop</th>
<th>Launch</th>
<th>Operate</th>
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<tbody>
<tr>
<td>Structure</td>
<td>Corporate Incubation Division</td>
<td>Corporate Business Development Division</td>
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<td></td>
<td>Business exploration</td>
<td>Business development</td>
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<td>Mechanism</td>
<td>Business Innovation Planning Division</td>
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<td></td>
<td>Acceleration of business development</td>
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<td></td>
<td>No. of personnel as of 6/1/2019: Exclusive (195), Concurrent (73): Total (268)</td>
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Enhance business development capability and create business which can be pillar for the next Mid-term Management Plan
Creating New Pillar Business for Next Mid-term Management Plan

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<th>Summary</th>
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<td>• FY2014: Started execution of “ecosystem for new business creation” and “lean startup”</td>
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<td>• FY2015: Established Design Center and strengthened business development function with design-oriented mind</td>
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<td>• FY2016: Strengthened cooperation with the Central Research Laboratories and accelerated technology-driven business development</td>
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<td>• FY2018: Focused on the role of launching our own business from supportive business development</td>
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<th>Key Achievements</th>
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<tr>
<td>• Rapid launch of dotData business</td>
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<td>• Full-fledged entry into drug discovery business with our cutting-edge AI technologies</td>
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<td>• Business development through open innovation (NEC X, Smart Wellness, Insight Marketing)</td>
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<th>Future Development</th>
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<tr>
<td>• Promote impact-driven business development aiming at solving social issues</td>
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<tr>
<td>• Promote more efficient and effective commercialization of businesses by enhancing technology maturity evaluation and value creation methods for the cutting-edge technologies at the Central Research Laboratories</td>
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**dotData Business**

**Achievement**

Obtained 20+ paid customers in just a year since commercial launch

**Strength**

the First and Only end-to-end data science automation for the enterprise

**Future Development of dotData**

Targeting enterprise value of ¥50bn by FY2022
Develop advanced technologies as outstanding global market leader

**Future Development of NEC**

Trigger a paradigm shift in analytics industry
Launch new services to eliminate the analysis talent exhaustion and deliver dramatic speed and business insight for organizations

**Recognized as a leader** in solution for “Automation-Focused Machine Learning,” by independent researcher

**Provides reference architecture in AWS circumstance**, capable to prepare data analysis foundation and easily analyze data in short term

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2018/4 Press conference for establishment
2018/7 Commercial launch
2019/2 Launch of Japan entity
2019/5 External evaluation
2019/6 Press release

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<Drug Discovery Business> Aims to become a drug developer through the approvals of the individualized neoantigen cancer immunotherapy

**Achievement**
- Revised Articles of Incorporation and entered into cutting-edge AI-based “Drug Discovery Business”

**Strength**
- “Superior Method: AI” & “Superior Data” developed through 20+ years of research and business development efforts

**Future Development**
- Aims to achieve an Enterprise Value of ¥300bn for the drug development business by 2025

**Plan**
- Cooperating with various partners to enhance development process

**2019/4**
- Invested $50mn in BostonGene through Series A financing, aiming at enhancing process and success rate of clinical trials of individualized neoantigen cancer immunotherapy

**2019/5**
- First company in Japan to jointly initiate clinical trials for “individualized neoantigen vaccine” with Transgene in US and Europe
### NEC X
**Accelerator in Silicon Valley**

- **Product authenticity verification solution business**
- **Causal analysis solution business**

### Open Innovations

#### team: Smart Wellness

**FiNC**

- Early detection of health conditions with sensors built in shoes

#### team: Insight Marketing

**FiNC Technologies Wellness service**

- Joint development of wellness solutions

### NEC X

- **Commercialization of technologies after dotData**
- **Discover new insights by digging into consumer needs**

### Smart Wellness

- **Develop business as a speed of venture company**
- **Developing services with consumer-targeted IoT product “Insole”**

### Insight Marketing

- **Joint AI analytics service with dotData**
- **AI-assisted purchase projection**
- **Research service with bio info**

* : NEC’s AI tech “Remote Gaze Detection Technology”

: Service to launch in July
Business Value of dotData

**Time**
Move from raw data to business impact in days, not months

**Skill**
Enable everyone on the team to effectively execute projects

**Insight**
Automatically extract business insights necessary for future prediction
Process of Data Science Enabled by dotData

Old Way

- Identify Business Use Case
- Data Preparation
- Feature Engineering
- Model Design Machine Learning
- Production (Operation)

Several months

dotData

- Identify Business Use Case
- Data Preparation
- Feature Engineering
- Model Design Machine Learning
- Production (Operation)

One-day

Automation

Achieve equal or better results than old way
NEC’s differentiating factor

Aims to be directly involved with drug discovery by utilizing its existing IT tools to deliver drugs to patients

Drug Discovery Support
- Prevention
- Diagnosis
- Electronic medical record

IT Tools

Drug Discovery

Drug Products

Other IT Companies

NEC
Development Flow of NEC’s individualized immunotherapy

1. Biopsy
2. Neoantigen Prediction System
3. Individualized Neoantigen Vaccine Synthesis
4. Administration