

3M Value Creation Process

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**Information and Knowledge for All:
*Towards an Inclusive Innovation***

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3M Value Creation Process

Analysis using SECI Model on cooperative creation of tacit knowledge with customer which is also the strength of 3M

WICI Japan VCD² Subcommittee
Hisao Kumakura, 3M Japan

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1.3M

3M's First Customer Inspired Innovation...

Two-tone cars were in demand...

But a clean paint line was very hard to achieve...



Which 3Mer Dick Drew observed while visiting to sell sandpaper...

and he remembered some stuff he'd seen in the laboratory...

50-plus Customer Technical Centers around the world



Saint Paul, USA



3M Brazil



3M Japan



3M Germany

We bring solutions to markets through our business groups

2016 Results

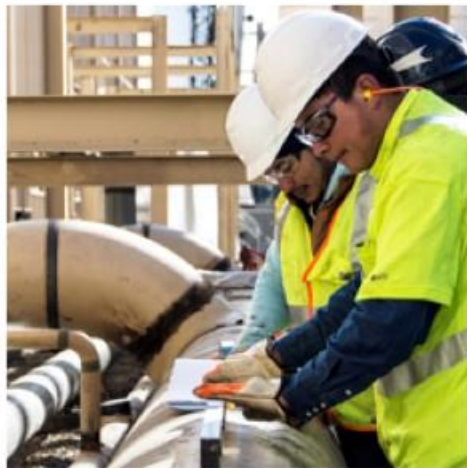
3M **\$30.1B** Revenue
24% Operating Margin



Health Care

\$5.5B

32%



Safety & Graphics

\$5.7B

25%



Industrial

\$10.3B

23%



Electronics & Energy

\$4.8B

22%

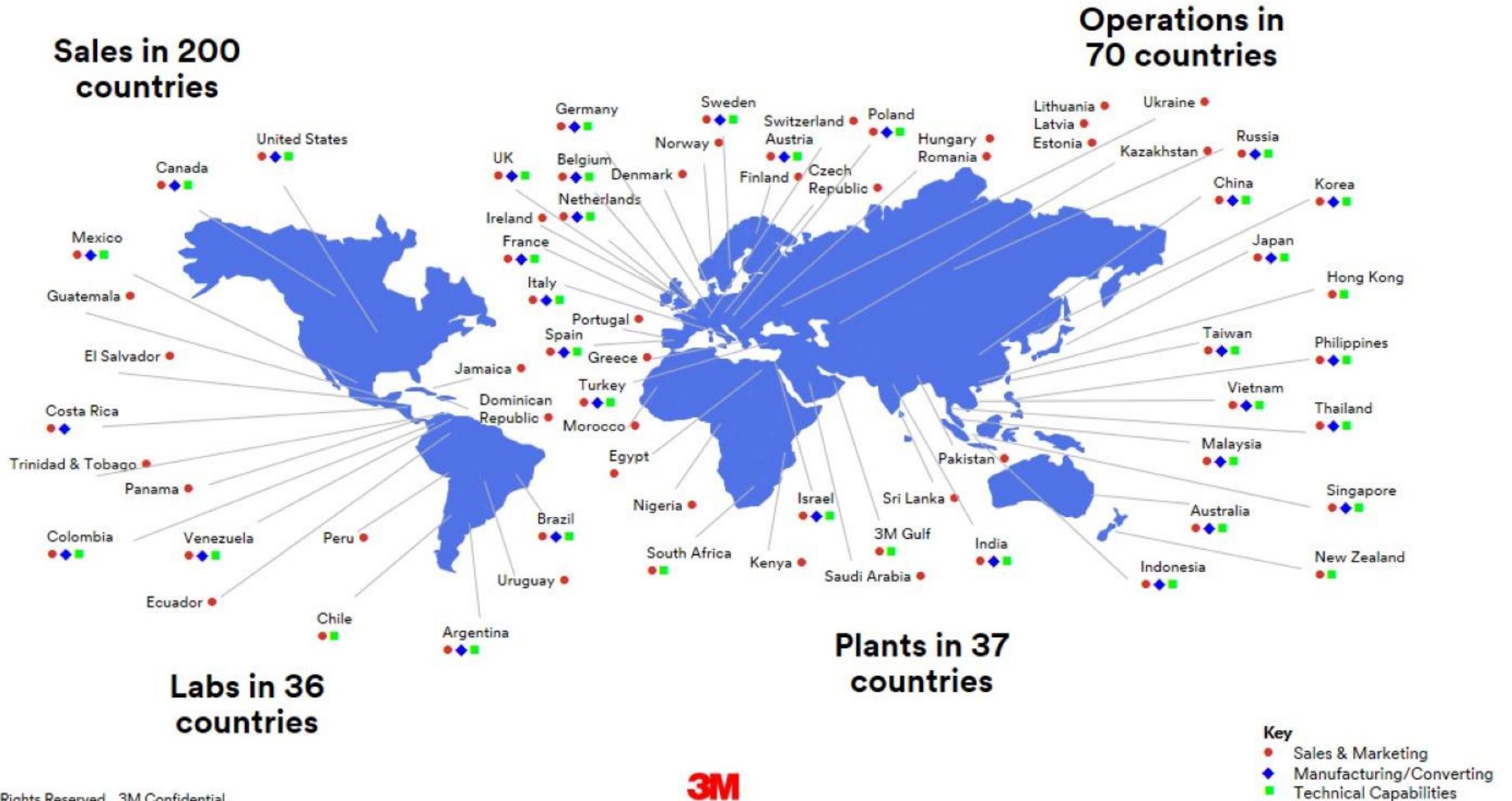


Consumer

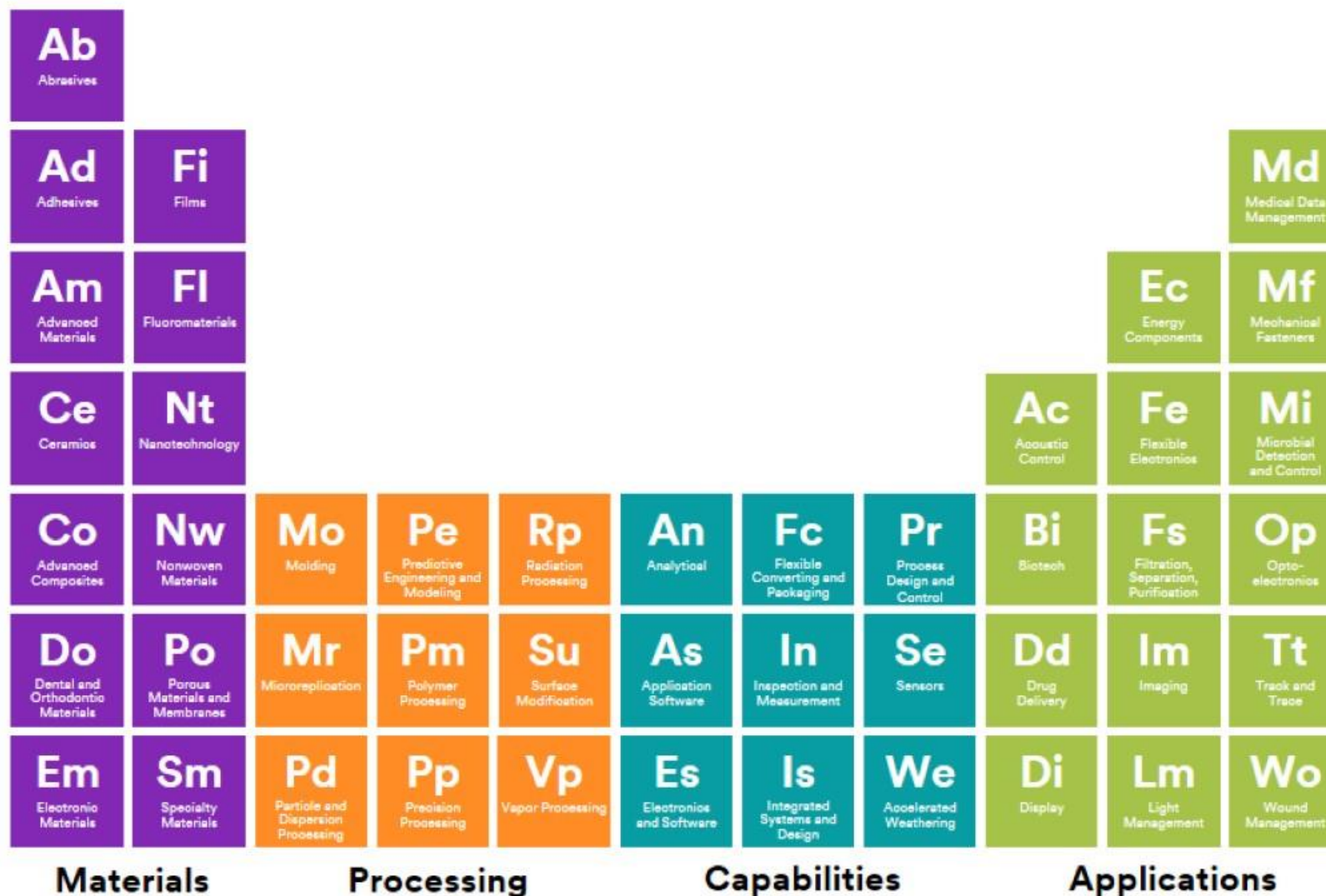
\$4.5B

24%

Global capabilities



Technology

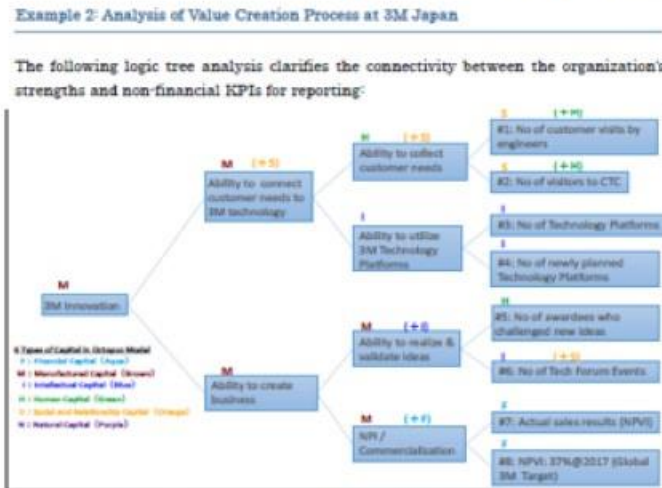
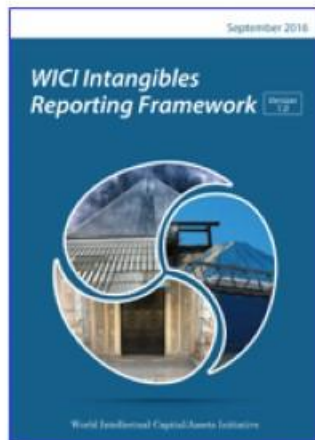


**2. WICI/Japan
Value Creation Driver Discovery
(VCD²) Subcommittee**

2. WICI Japan VCD² Subcommittee

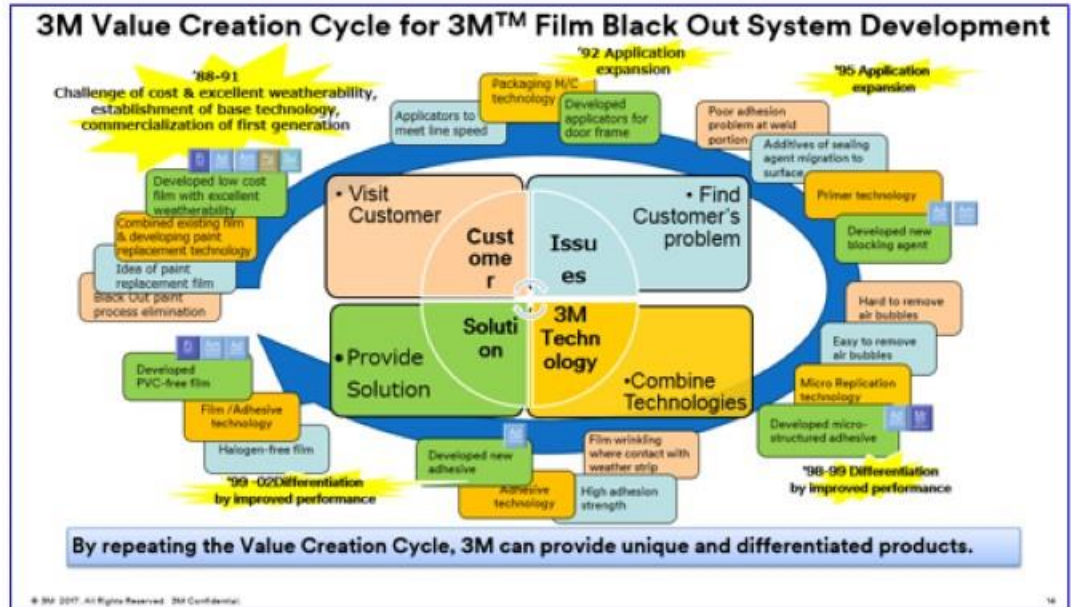
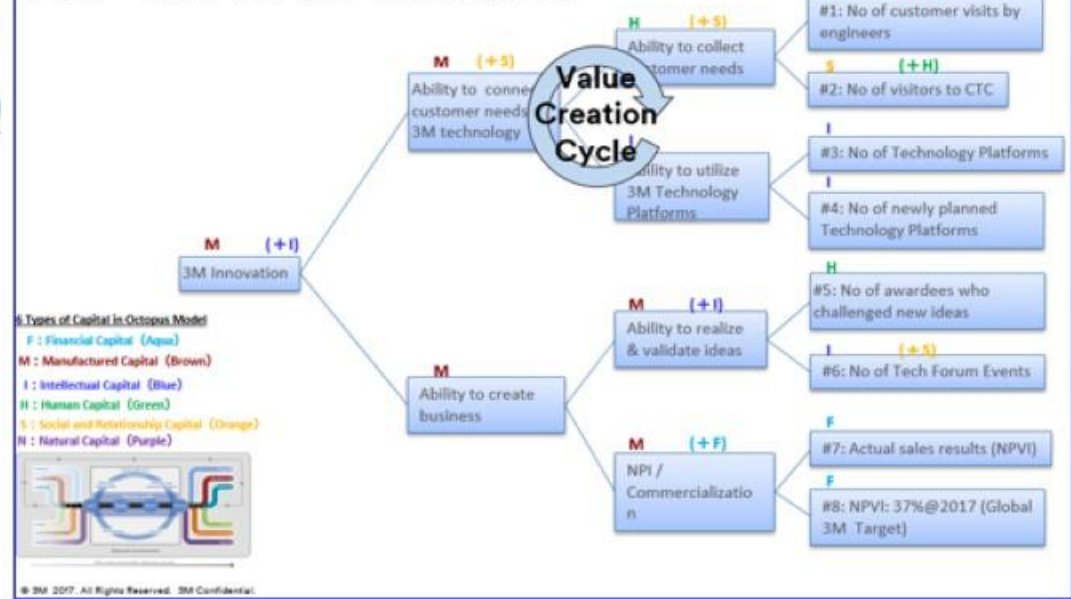
Activity of Value Creation Driver Discovery (VCD²) (@IC11)

- Aims to promote an understanding of the value creation process,
- Challenge to show the critical management indicators of value creation systematically
 - by identifying the value creation drivers and their configuration through the explore of connectivity, which support the value creation story.
- This activity was reported at IC 11.
- The result reflects on WICI Intangibles Reporting Framework:



Source: presentation by Mike Masahiko Kon (3M Japan Vice President/WICI Japan Vice Chair) at 12th World Congress of Accounting Educators and Researchers, Florence (Italy), November 14, 2014.

VCD² Tree for 3M Innovation

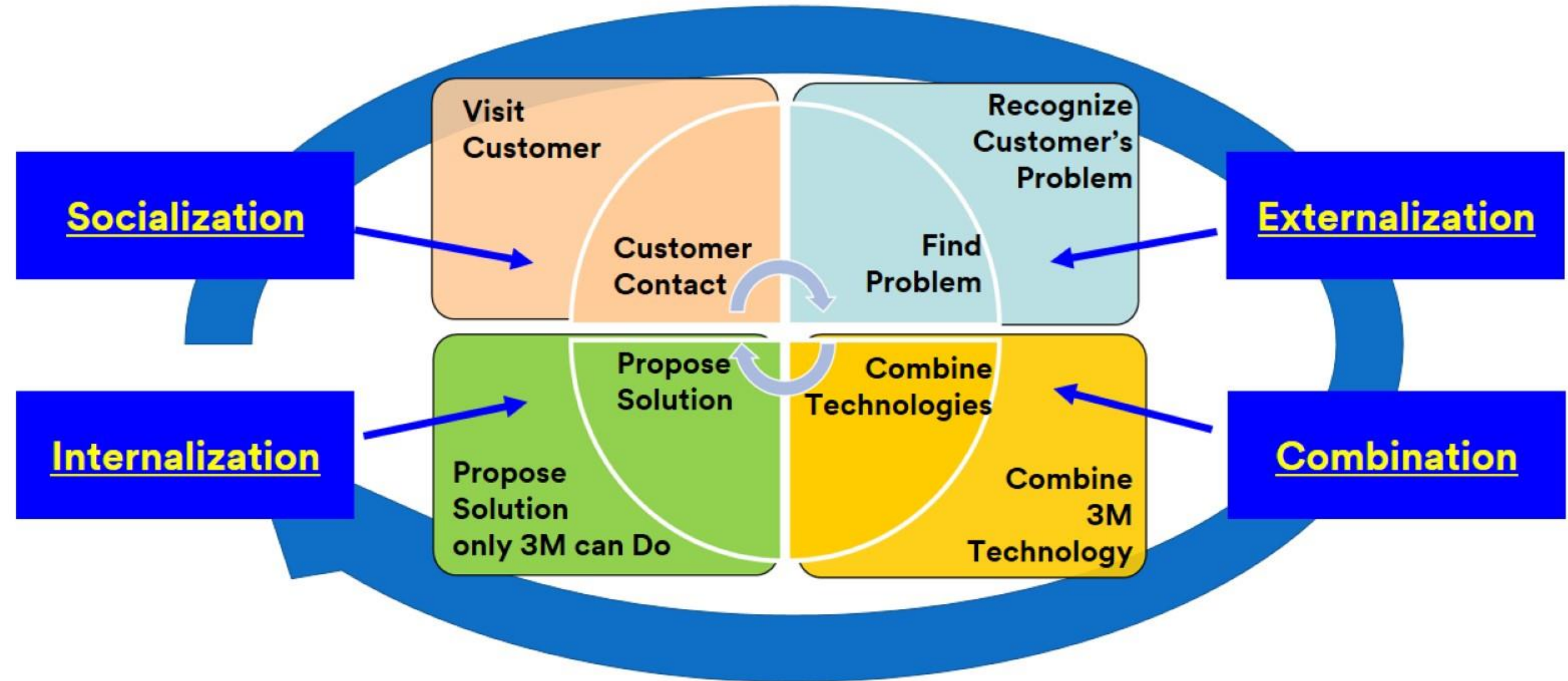


3. The awareness of the problem:

Is it possible to explain the handling of tacit knowledge at 3M and the strengths of the 3M value creation process by Analysis using SECI Model ?

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4. Analysis on the 3M value creation process using SECI Model

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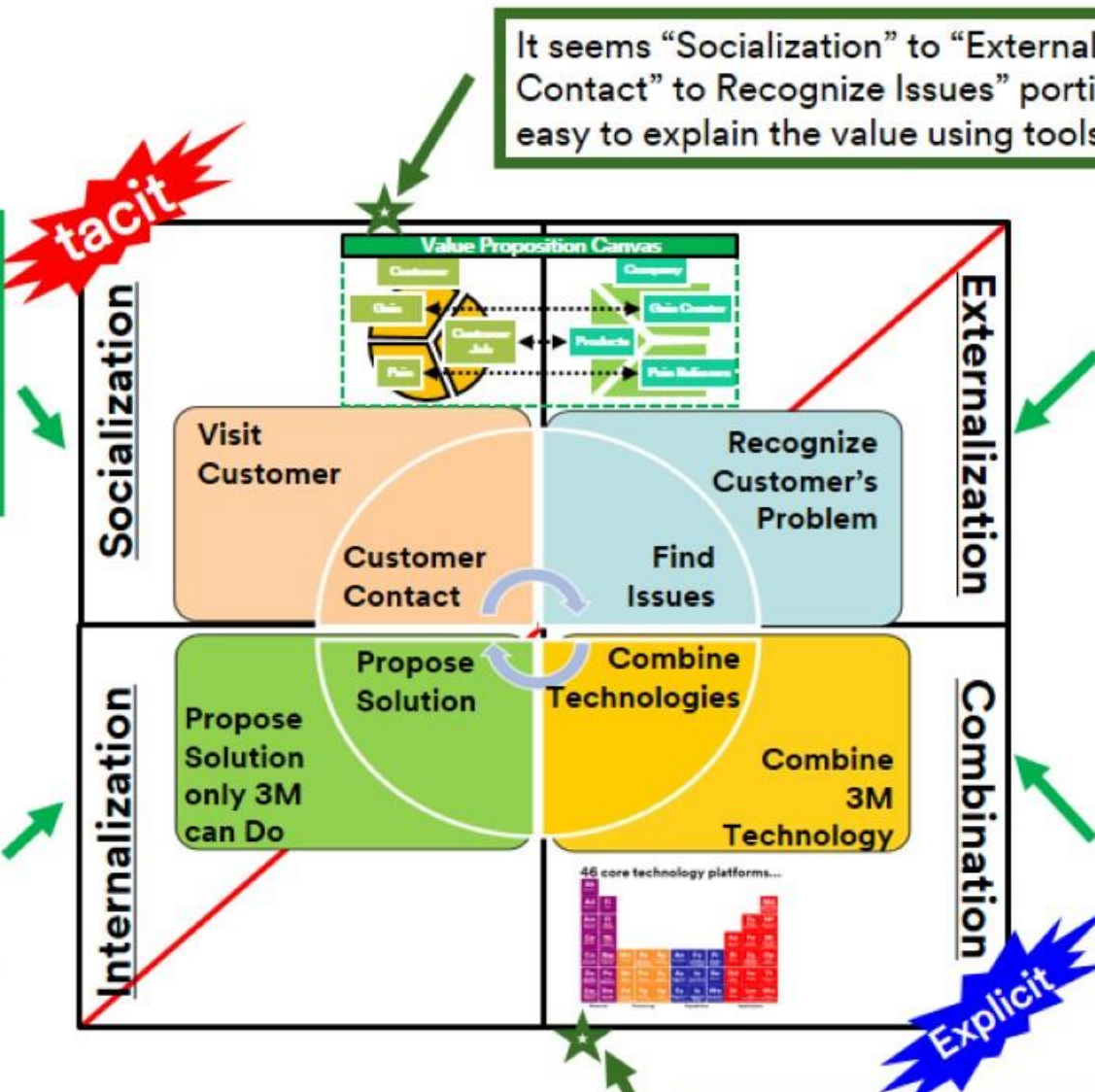
It seems "Socialization" to "Externalization" portion of SECI meets "Customer Contact" to Recognize Issues" portion of 3M Value Creation Process, and easy to explain the value using tools like Value Proposition Canvas

Experience Customer Pain

- Origin of 3M Innovation
 - 3M encourage engineers themselves to go to customer sites
- **Customer's GENBA**

Propose solution only 3M can do

- **Customer's GENBA**



Visualize & Share Issues

- Sharing tacit knowledge by engineers communication at various fields (BA)
- (personal network, Tech Forum, tec.)
- Convert to Explicit and Create Concept
- **Engineers Communication BA**
- **(Technical Forum) etc.**

Combine Technology

- Combine 3M technology & Prototyping the solution.
- Combination by communication b/w Business Units
- **3M Technology Platform (BA)**

It seems handling technology like modules as 3M Technology Platform makes easier to think of combination, and to facilitate Explicit knowledge conversion

5. Hypothesis on 3 loops for 3M value creation process

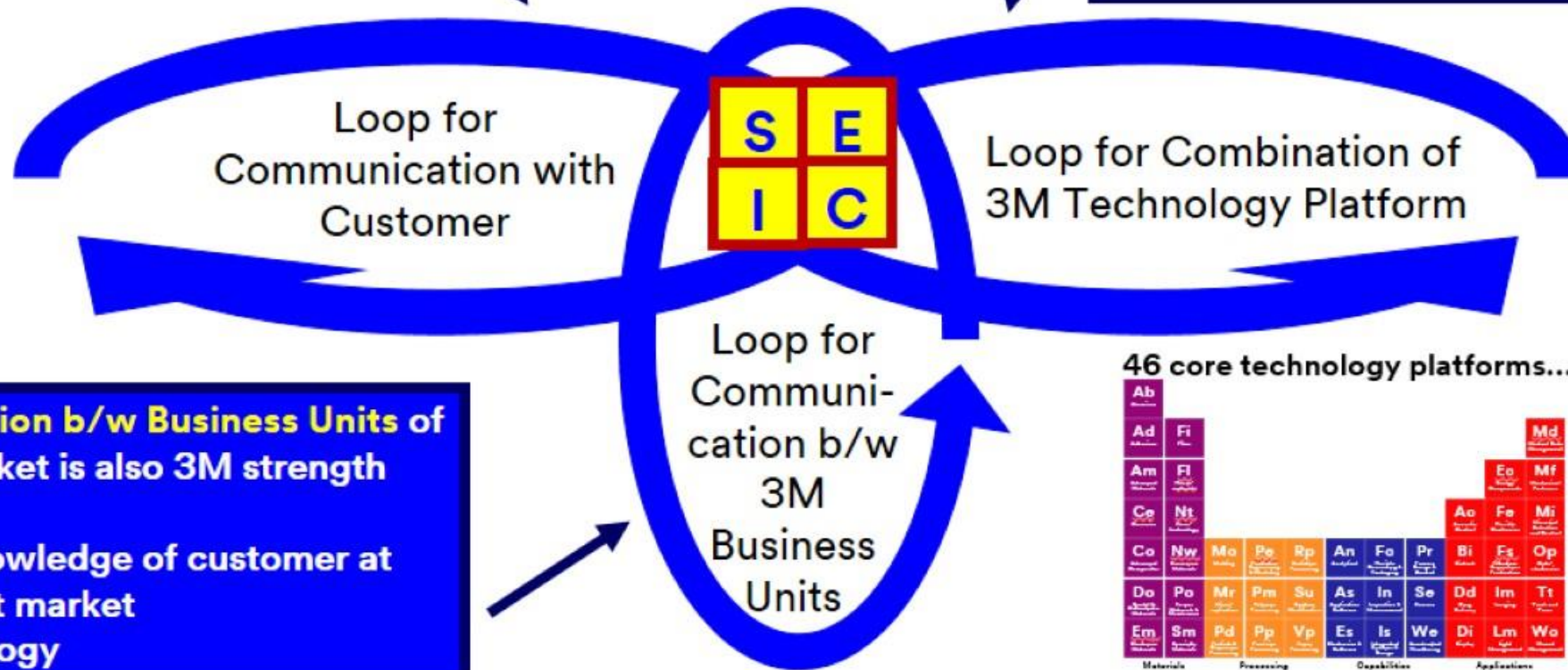
Hypothesis on 3 loops for 3M value creation process

3M Value Creation Process

- 3M encourage engineers themselves to go to **customer sites (GENBA)**
- And find customer's problem through to experience customer's pain point

Various Communication Field

- ex: Tech Forum which manages Engineers themselves
- Handling technology like modules as 3M Technology Platform makes easier to think of combination, and to facilitate **Explicit knowledge conversion**



- **Communication b/w Business Units** of different market is also 3M strength
- **Connecting**
 - tacit knowledge of customer at different market
 - **Technology**

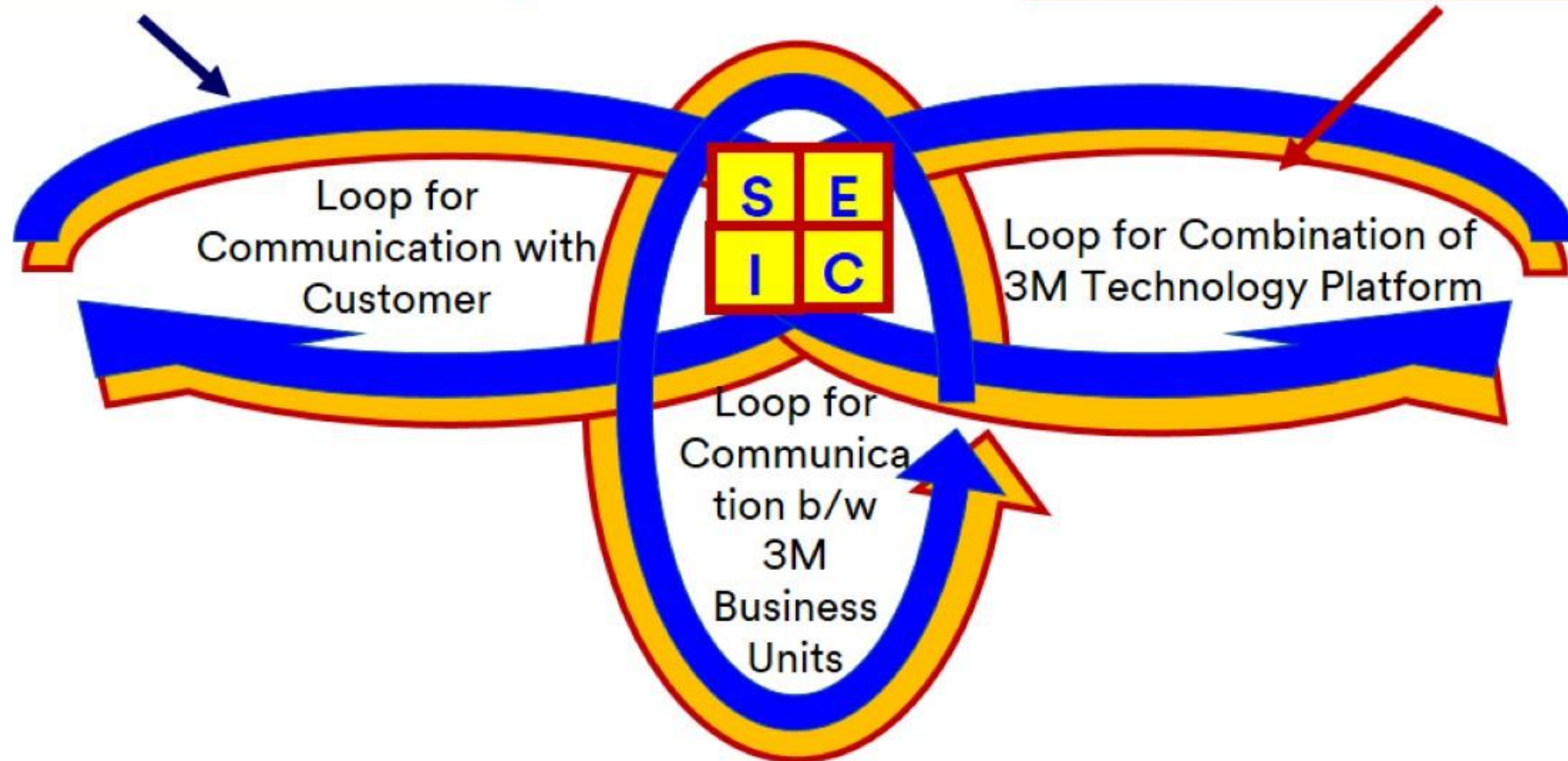
46 core technology platforms...



Remaining issues from 3 loops Hypothesis

Are there any point that we can further strengthen the handling of tacit knowledge which is also 3M strength ?

By utilizing IoT / AI,
Is it possible to accelerate and strengthen
the three loops?



Thank you