



University Industry
Demonstration Partnership

Electrolux Presents Top Research Challenges

UIDP Technology Showcase Webinar

Moderator: Anthony Boccanfuso, President, UIDP

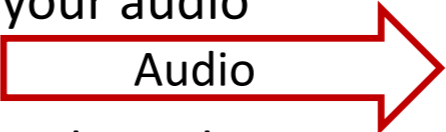
Presenter: Chiara Ciardetti, Project Manager, Electrolux
Open Innovation

Date: November 17, 2015

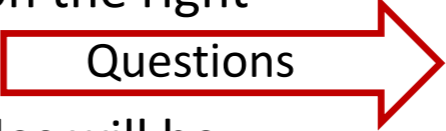
Webinar Logistics

- You should be able to hear me talking now.
- Two Audio Options: Phone or Computer
 - Choose one and connect
 - Pro tip: Don't call in on your phone if your audio is set to "Mic & Speakers"
- Ask questions using the Questions Panel on the right side of your screen ANYTIME.
- The recording of the webinar AND the slides will be available after the event. We will post them on uidp.org and send you a link.

Audio



Questions






University Industry
Demonstration Partnership

About UIDP

The University Industry Demonstration Partnership (UIDP) is a unique forum for representatives from universities and industry to find better ways to partner.

Representatives of UIDP member organizations work together to

- Maximize the potential of existing research collaborations and partnerships
- Build new networks and opportunities for future collaborations
- Remove barriers to joint research project success

Learn more at www.uidp.org.

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In order to protect your privacy, you will receive an email confirmation after completing the form below. Follow the instructions listed in the email to complete your subscription to the UIDP mailing list.

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University Industry
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Chiara Ciardetti

- Received a degree in Economical and Commercial Law from the University of Florence in Italy
- Joined Electrolux in 2000
- Currently part of Global R&D
- Contributes to innovation acceleration across all the geographical sectors, promoting innovative solutions that are valuable for all the company's business, products, services and technologies



“Innovation cross Product Domains”

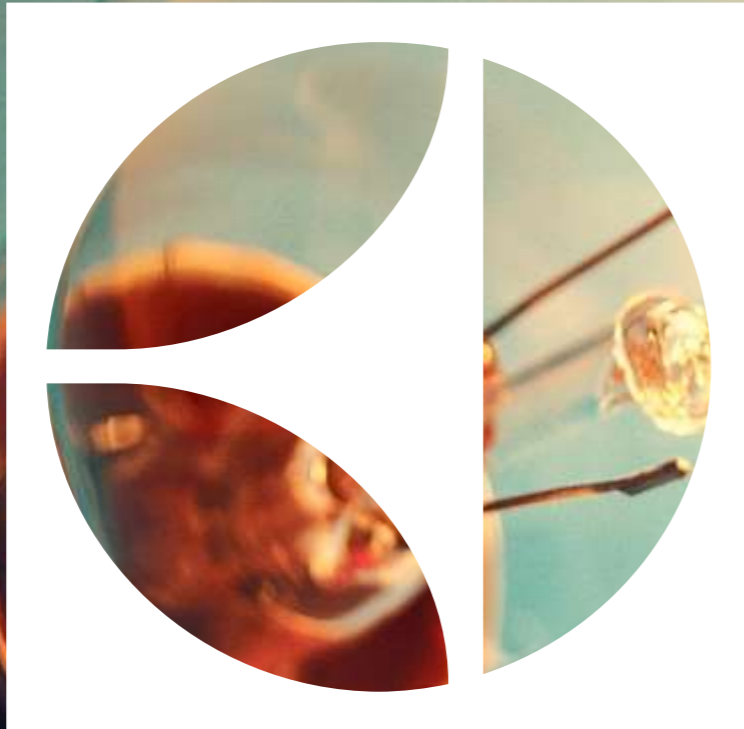
Electrolux presents the Innovation focus areas, key insights to inspire the innovators network & to capture truly innovative solutions for new products & business

UIDP Webinar

17th November 2015

Chiara Ciardetti, Open Innovation Project Manager





ELECTROLUX HOME
APPLIANCES

Company Introduction

The Electrolux Group today

Net sales,SEKb

112

EUR 12.3 b
USD 16.3 b

Sales in

150

countries

People

60,000

in 60 countries

Annual Sales

+50

million products

Numbers from 2014, using 2014
average currency exchange rates



A history of innovations



1912
Lux I

2012
Ultra One Mini



1949
L460 Refrigerator



1964
Luxomatic vacuum cleaner



2001
Trilobite



2004
Ergorapido



2012
Electrolux Inspiration Range



2012
Electrolux Grand Cuisine



2013
Sous-vide cooking for domestic use



1901

AB Lux



1912

AB Lux & Axel
Wenner-Gren
cooperation



1919

AB Electrolux



1928

London
Stock
Exchange

1984

Zanussi



1986

White
Consolidated

1994

AEG



2001

Email



2011

Olympic
& CTI



2014 in brief

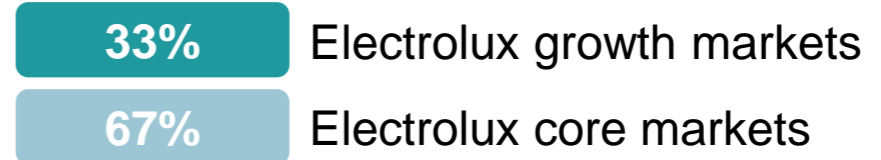
- Sales increased by 3%
- Operating margin improved from 3.7% to 4.3%
- Strong improvement in operating income for Major Appliances Europe, Latin America and Professional Products

Business Areas % (Group sales)

Europe & Middle East & Africa 31%
North America 29%
Latin America 19%
Asia Pacific 8%
Small App. 8%
Professional 5%



Share of Group sales

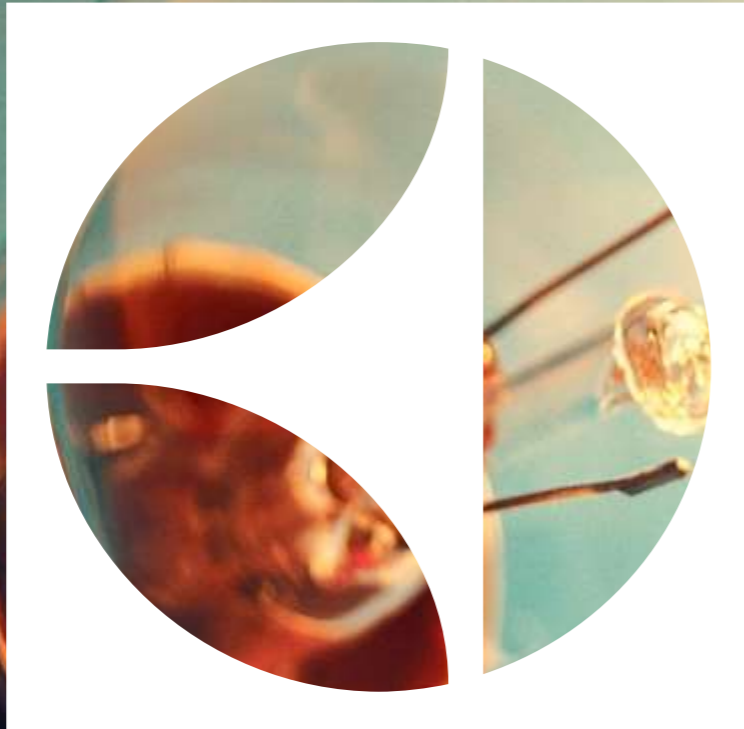




Product overview



* Include the rapidly growing areas of air-conditioning equipment, water heaters and heat pumps, as well as consumables, accessories and service



OPEN INNOVATION STRATEGY

3 Pillars

Open Innovation

Who We are

Location: Italy



OI Director
Lucia

OI Project Leader
Manuel



OI Project Manager
Chiara



OI Project Manager
Jennifer



OI Project Leader
Julia



OI Project Leader
Summer



Location: Italy

Location: China





Role:

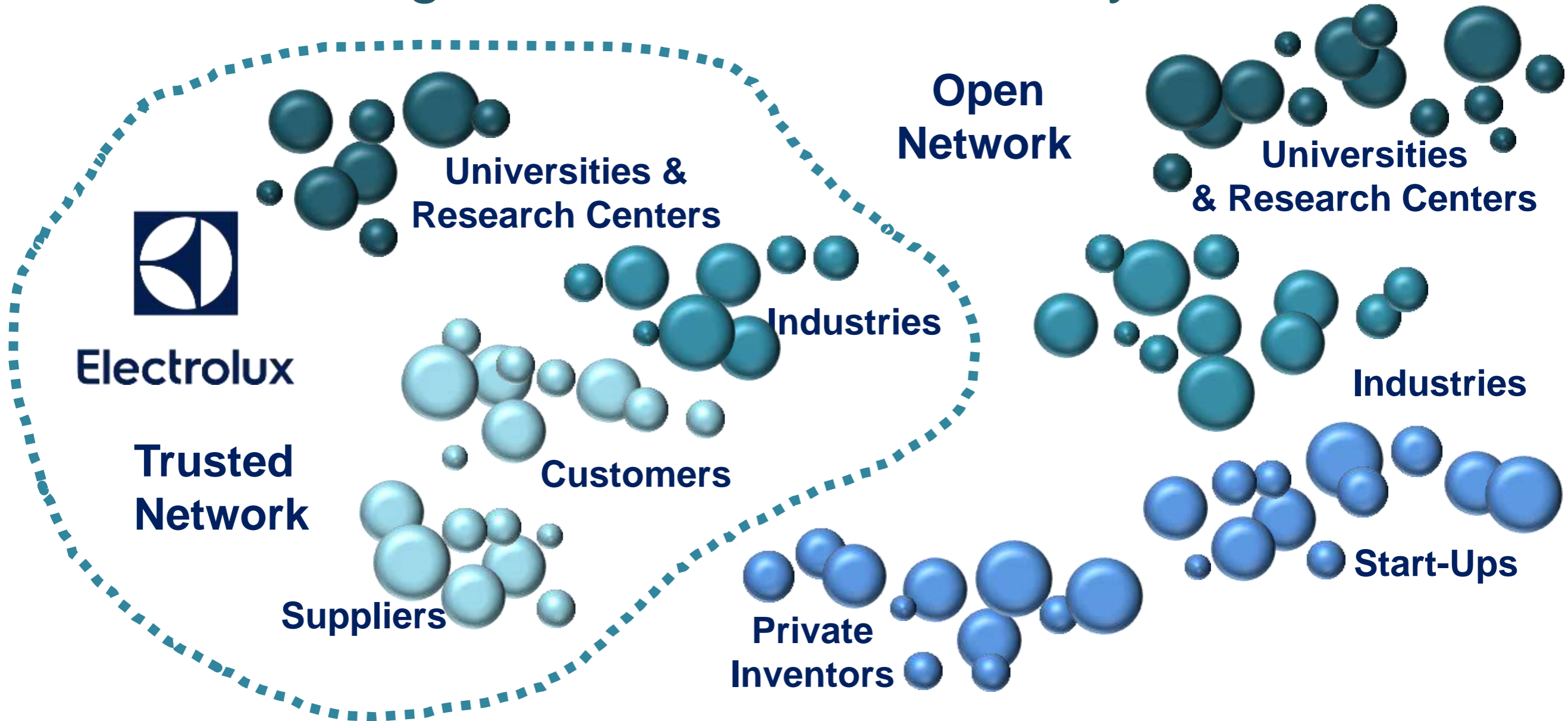
Bridge btw external network of Innovators and company stakeholders.

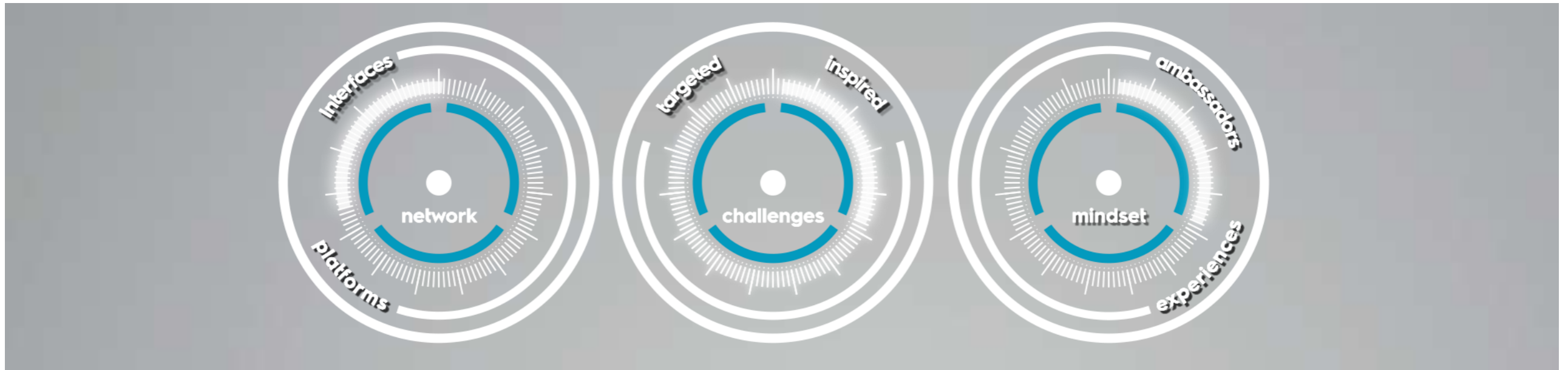
Responsibility:

Capture new innovative business solutions outside the company and promote internally.



Move **beyond the trusted network**,
reaching innovators in new ecosystems.





Open Innovation to Double Innovation Power The 3 Pillars Strategy



NETWORK
Alliances with Intermediate
Partners to reach Innovators



CHALLENGES:
Calls for Ideas
to External World of Innovators



MINDSET:
Attitude & Behaviour to
support OI promotion



From targeted challenges...

...to inspired challenges



Examples Target

Technology To License

Licensing Selective Metal Separation Technology

Wireless Sensor Temperature Measurement

RESPONSE DUE DATE: 9th November 2014 MANAGER: Oliver Worsfold, Ph.D

Opportunity

licensing, product acquisition, proof of concept leading to scale-up to manufacturing, supplier agreement, R&D collaboration.

Timeline

Phase 1: Proof of concept of the System (System performance test)
Phase 2: Demonstrator of the System (Acquisition of a unit)
Phase 3: Industrialization Development (Co R&D for the system application)

Financials

Costs to be defined at each phase by negotiation

Keywords: Wireless, Temperature, sensor, household appliances

NineSights®



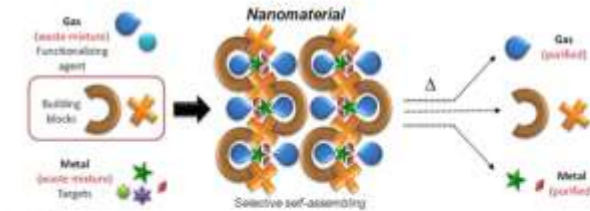
Detailed Solution Description

This technology process is forming a spontaneous molecular network, whose formation and dissociation (reversible) is triggered by **introducing and expelling CO₂ respectively, leading to a cyclic capture and release system.**

CO₂ can spontaneously functionalize polyamines into polyanionic and thermoreversible chelating agents. In the presence of cationic partners such as metals, supramolecular materials can be obtained (see illustration below).

This self-assembling process into a dispersed organized solid or liquid requires an extremely high degree of complementarity between molecular building blocks. It is possible to **precisely define** (tailor) which element to retain from the mixtures.

This selectivity was demonstrated during fundamental studies and lead to the selective incorporation and capture of the building blocks from the starting mixture.



It was successfully demonstrated that:

- The yield of capture, or % of captured metal, can reach **99% in a single step on monometallic effluents.**
- Selective capture can be performed on bimetallic mixtures with 95% of captured metal and 95% purity (several crops, one processing cycle).
- Selective capture can be performed with 100/100/100/75% of captured metal on tetrametallic mixtures, leading to 25% of a single purified metal in the supernatant. The metal selectively left in solution can be tuned on demand.

 **SpecialChem**
connect • innovate • accelerate

Examples Inspired

		
<p>TOMORROW'S KITCHEN NEEDS</p>	<p>TOMORROW'S HEALTHY HOME NEEDS</p>	<p>TOMORROW'S LAUNDRY NEEDS</p>
<p><i>The future role of the kitchen will be a complete experience embracing all senses and fully integrating kitchen appliances, food and entertainment.</i></p>	<p><i>Innovation is at the heart of a healthy home. Tomorrows appliances will utilise intelligence to manage the environment and so are we!</i></p>	<p><i>Thinking beyond the routine: Truly innovative concepts of treating fabrics and water management.</i></p>




REDUCING OUR ENVIRONMENTAL IMPACT

9 | Share | Like | +1 | | | | |

We're committed to reducing the impacts on the environment associated with the production and use of our products.

DRIVING SUSTAINABILITY, CREATING CHANGE

This is a huge challenge – and one we can't achieve alone. For example, we want to halve the water use and greenhouse gas emissions associated with our laundry products. But most of the water and more than half the greenhouse gas emissions associated with laundry product use come, not in our factories, but when the consumer does a wash. Similar challenges apply to our soaps, shampoos, and other home care and personal care products.



But though the challenges are great, so are the opportunities for innovation. Our laundry products are used 125 billion times a year. Small improvements – designing detergents that wash better at lower temperatures, and use less water to rinse - make a big difference.

We'd like to hear from potential partners who want to work with us to improve sustainability in the following fields:

- CAN YOU HELP US BRING COST-EFFECTIVE ENERGY TO MILLIONS?**
[> Storing renewable energy](#)
- DO YOU HAVE A TECHNICAL SOLUTION FOR SUSTAINABLE WASHING?**
[> Sustainable washing](#)
- BE PART OF THE PACKAGING SOLUTION**
[> Better packaging](#)

The Challenges Process

Focus

Launch

Scout

Screen

OIB



- Specifications
- Focus Areas



- Networks Selection
- Challenges Launch



- Ideas Identification
- Ideas Clustering
- Data Collection



- Deliverables Analysis
- One-Page Preparation



- Promotion to internal stakeholders

The Challenges Process Output

“OI Ideas Portfolio”



Recipe Generator in Let's Taste app



Timer Knob



Herb Garden



Electrolux

The Challenges Triangle

Decision Makers

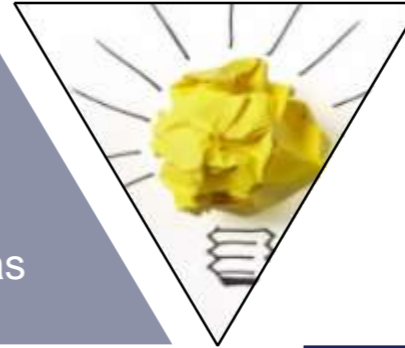
Steering Committees
to filter & manage ideas



Decision
Makers

Experts

OI
Ideas



OI Ideas

**Proposals from
external non-trusted
networks**

Subject Matter Experts

Network of experts
to understand value of ideas

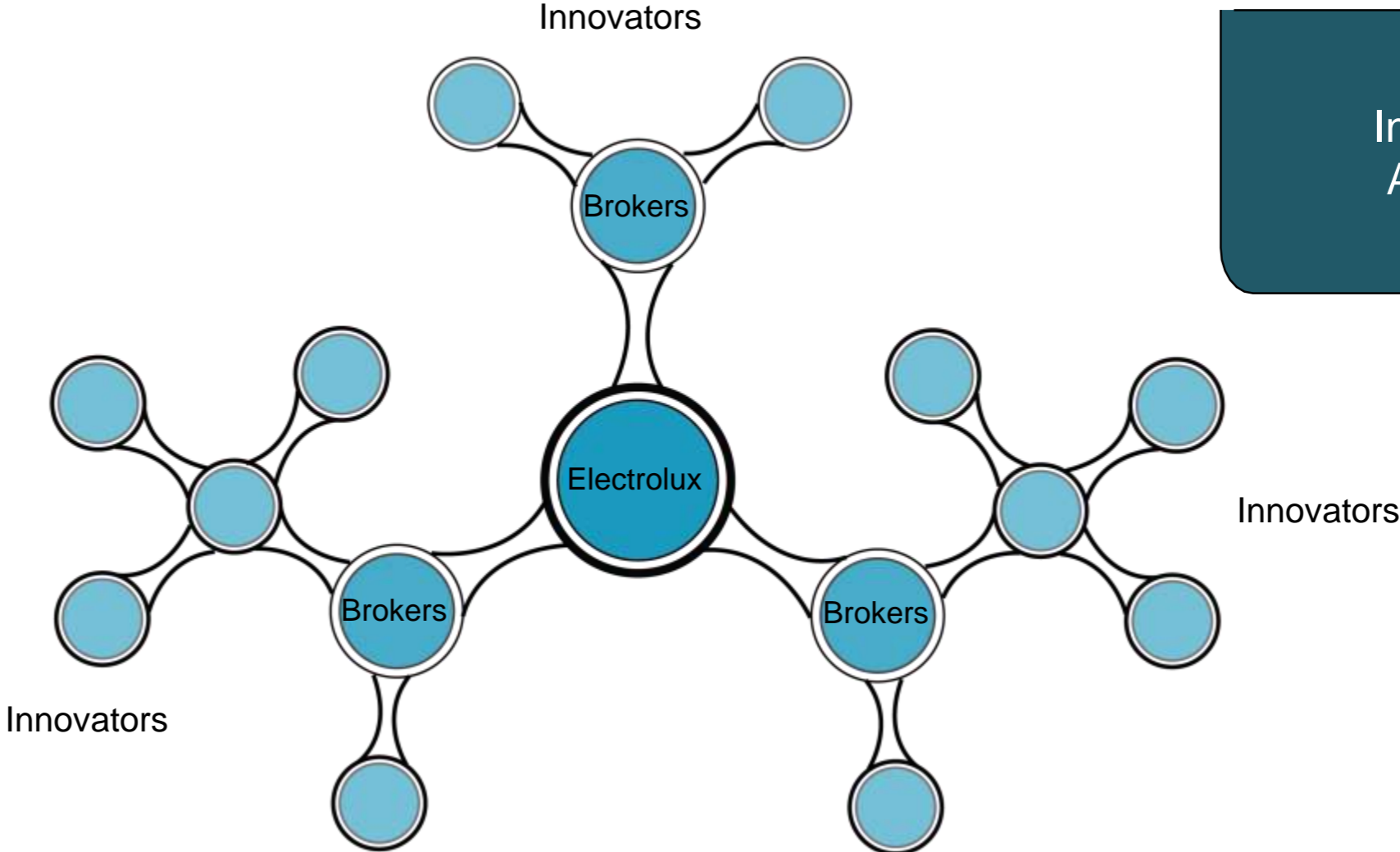




Network

Build alliances with intermediate partners to reach innovators.

Brokerage Alliances



Innovation Alliances

from OI platforms...



Examples

Scouting Companies





...to OI interfaces

Examples

banks & investors



The Network Triangle

Internal OI Network

Company Departments who propose ideas from internal or external creativity



Internal
OI
Network

External
Trusted
Network

External OI
Network



External OI Network

New Innovators who propose ideas for existing and new businesses

External Trusted Network

Trusted Innovators who propose ideas from running and new collaboration



The Network Process

Focus

Launch

Scout

Screen

OIB



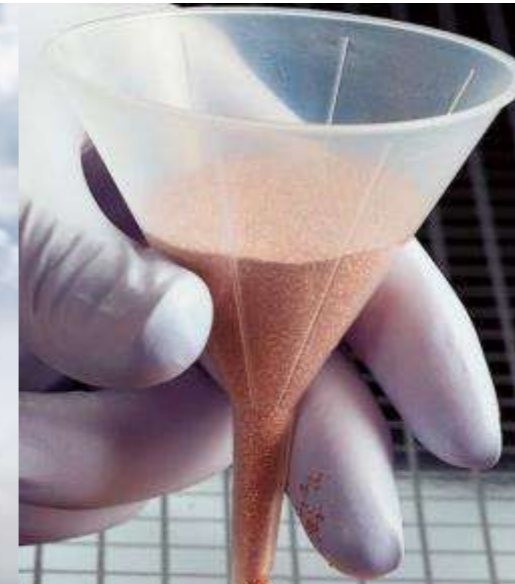
- Evolutions
- Focus Areas



- Networks Selection
- Research Plan



- Brokers Identification
- Brokers Clustering
- Data Collection



- Deliverables Analysis
- One-Page Preparation



- Promotion to OI Team



Mindset

Let's break some syndromes/paradigms...

NIH Syndrome

- Everything coming from outside is suspicious and not reliable
- We're the best, only what we do create is good enough for our customers.



NIH Syndrome

Fearing Diversity

- Different opinions, cultures, vision are a barrier.



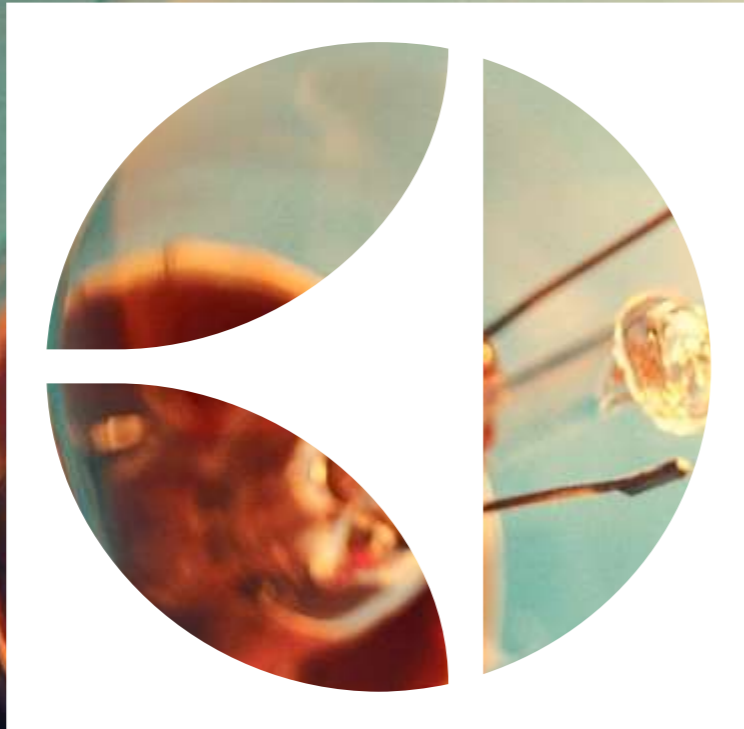
Fearing Diversity

IP Paradigm

- A great portfolio of Patents is key for success.
- We have to control and own IP to deliver innovation



IP Paradigm



Electrolux

**THE
CHALLENGES**

**Innovation Focus
Areas**

Electrolux Product Domains



Kitchen

In the kitchen, our products cater to the enjoyment and ease of storing, preparing and cooking great tasting food, as well as washing up the dishes afterwards.

Categories: refrigerators, ovens, stoves, dish washers, coffee machines, toasters, blenders, mixers, etc....



Laundry

In the laundry room, we help consumers take the best care of their clothes in a resource efficient way

Categories: washing machines, dryers, irons, refreshing systems, steaming solution, etc.....



Healthy Home

How can we ensure that our homes are supportive environments for children to live in and grow in, in a way that enables and encourages them to become healthy, engaged and happy individuals?

Categories: filtration, air purifiers, ventilation systems, electric water



Electrolux Product Domains



Kitchen

1. ENHANCING FOOD TASTE
2. CONNECTED AND SMART KITCHEN HELPERS
3. FRIDGE MANAGEMENT
4. ERGONOMIC & CONVENIENCE
5. FOOD FRESHNESS SENSING
6. SENSORIAL EXPERIENCE



Laundry

1. ADVANCED AUTODOSING
2. HEALTHY CLEANING
3. STAIN REMOVAL SOLUTIONS
4. LOVE TO WEAR REFRESHED SNEAKER & GARMENTS



Healthy Home

1. AIR HEATING EFFICIENCY
2. WATER TREATMENT AND PURIFICATION



Challenge:
Focus
Areas



Kitchen





ENHANCING FOOD TASTE

For food lovers the cooking experience is a continuous research of best solutions to deliver tasty dishes. Innovative product or accessories should bring to consumers:

- New functions for authentic extra flavor infusing that are relevant for their preferences
- New functions that allow cook to make food tasting greater





CONNECTED AND SMART KITCHEN HELPERS

Consumers are looking for new solutions that help them streamline the ordinary meals preparation, discovery and escape the routine, while getting out the most from food and ingredients.

- Novel solutions that inspire to create new dishes and to explore new cooking skills
- Innovative accessories & products for food passionate
- New solutions to guide consumer to make any recipes and to build confidence in repeatability of great results

NOT LOOKING FOR:

SW/HW solution widely available in the market for connectivity and smart accessories (smart scales, spoons)





INVENTORY MANAGEMENT

Consumers are looking for new solutions that are flexible and improve adaptability of product and service to individual needs and choices

- Any new concept to win the inventory management game for fridge, freezer, home pantry
- New Product/Accessories: change the inventory of today
- New Services (and product): manage the full process from shopping list to home storage
- New way to communicate with food care products to manage the inventory

NOT LOOKING FOR:

SW/HW solution widely available in the market for connectivity and IOT





FRIDGE MANAGEMENT

Consumers are looking for new solutions that improve easiness of use and offer flexible solution to allocate smartly the space in the fridge and freezer:

- New Accessories to optimize space, reduced space waste
- Solution and systems for smart allocation of fresh and packed food
- Supermarket space management solution brought to domestic

NOT LOOKING FOR:

Stacking/flexible containers widely available on the market.



Kitchen



ERGONOMIC & CONVENIENCE

Consumers are looking for new solutions that provide intuitive interaction, highly functional for extreme comfort:

- New solutions that enable easy access and effortless living in the kitchen (effortless opening, 200% access)

NOT LOOKING FOR:

Standard and marketed solutions for hinges





FOOD FRESHNESS SENSING

Ingredients quality and freshness are the precious elements for a great dish and a tasty recipe. They also contribute to control the food spoilage and waste for a sustainable food consumption.

We are looking for any solution to:

- Detect food freshness with invasive and no-invasive technique

NOT LOOKING FOR:

Know solutions referring to food nose technology already in production





SENSORIAL EXPERIENCE

Silence, good smell, great lightening solution, comfortable surfaces and spaces for a kitchen environment that create a comfortable and pleasant domestic experience.

- Concept of new product/specification design based on a new philosophy of consumer interaction with Fridge, Freezer and pantry
- Any concept of new product based on new philosophy of interaction through senses
- Multi-sensorial product experience
- Futuristic & Visionary Product Concept or new functionalities
- Design opportunities in general, considering Lighting, Sound, Scent, Touch, Materials, Colors



Challenge:
Focus
Areas



Laundry





ADVANCED AUTODOSING

Consumption awareness and fabric protections require intelligent solutions for detergent use; as well as automated process to manage the washing with less effort from consumers. We are looking for:

- Advanced solutions to dose detergents especially washing powder

NOT LOOKING FOR:

Technical solution already available on market as under main competitor's brands.





HEALTHY CLEANING

Striving for a healthy environment to live in, consumers wish to wash out allergen and bacteria from their cloths and textiles to wear and touch purely clean fabrics

- New Solution for water sanitization
- Advanced solutions to machine sanitization
- New solutions for bed & mattress sanitization

NOT LOOKING FOR:

Solution UV mercury lamp technology base.





STAIN REMOVAL SOLUTIONS

For a clean on the go, handy & efficient solutions, we look at single dose capsules & accessories formulated for specific types of stains that help treating effectively the fabrics avoiding to wash the cloths

- Stain removal patches
- Stain removal capsules
- Stain removal additive scratcher





LOVE TO WEAR REFRESHED SNEAKER & GARMENTS

Appreciate the pleasure of wearing refreshed and deodorized garments and shoes. We are looking for solutions to provide new products or functionalities in the following areas:

- Wardrobe insertion that dry-cleans, decreases, refreshes and /or maintains garments fresh
- Shoe cupboard that dries, refreshes, and deodorizes sneakers and other shoes

NOT LOOKING FOR:

Similar solution on market for shoes treatment



Challenge:
Focus
Areas



Healthy Home





AIR HEATING EFFICIENCY

Explore novel technologies for reducing energy consumption and recovering / reusing the waste heat that's generated inside the air conditioner in order to increase the overall energy efficiency of the system.

- Novel thermoelectric generators
- Novel heat exchangers / condensers system

NOT LOOKING FOR:

Technologies that cannot be fitted inside the current housing of ACs.





WATER TREATMENT AND PURIFICATION

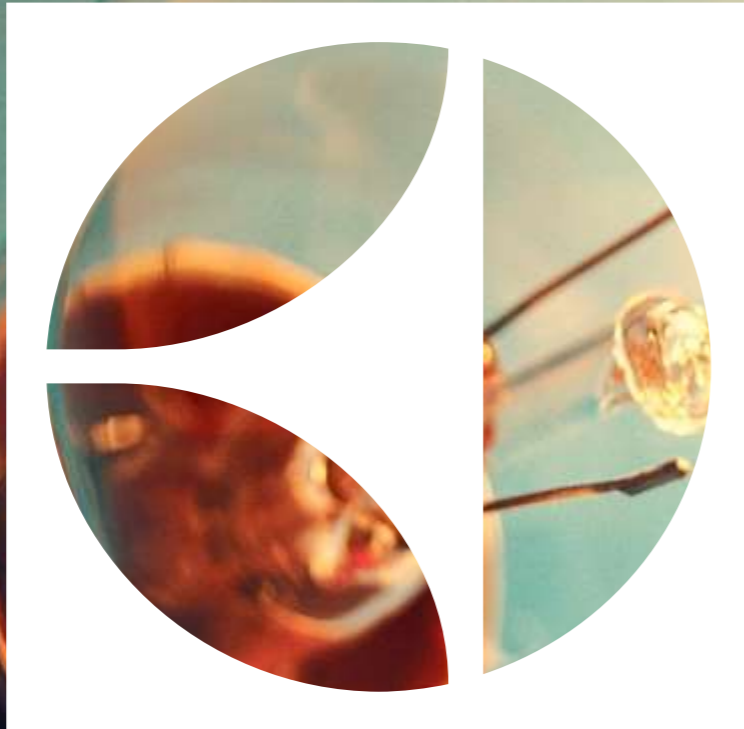
Water quality is fundamental to ensure family well-being and comfort sensation. We aim to provide an effortless access to great quality water, by targeting bacteria, virus and other harmful microbes, as well as heavy metals and pesticides.

- Innovative water filtering solutions (preferably with certification)
- Novel sensing solutions to monitor water quality

NOT LOOKING FOR:

Technologies widely available in the market such as membrane filtration, carbon or bioceramic filters.





THE
IDEAS
MANAGEMENT

All you need to know
to submit ideas

The Rules

What & How



PACS & ENABLER



1. Use Idea Forms

Document to collect Idea proposals for :

PACS: Products, Accessories, Consumables & Services to offer new value to consumers

ENABLER: Technologies, systems, components, solutions to improve all processes along the value chain

Forms will be sent contacting:
Open-innovation@electrolux.com

2. Follow the Deliverables

- Are **the Key elements** to describe the value of each idea
- The deliverable will be used by OI team and internal stakeholder to **evaluate the ideas**
- The deliverables are included in each form and can be compiled following the instruction given in the forms

3. Care of Confidentiality

Only **NON CONFIDENTIAL** data can be included into the form
The company policy does not allow to receive information that are not included into:

- Patent granted
- Patent Application filed & Public

NDA might be in second approaches if mutually agreeing on the scope



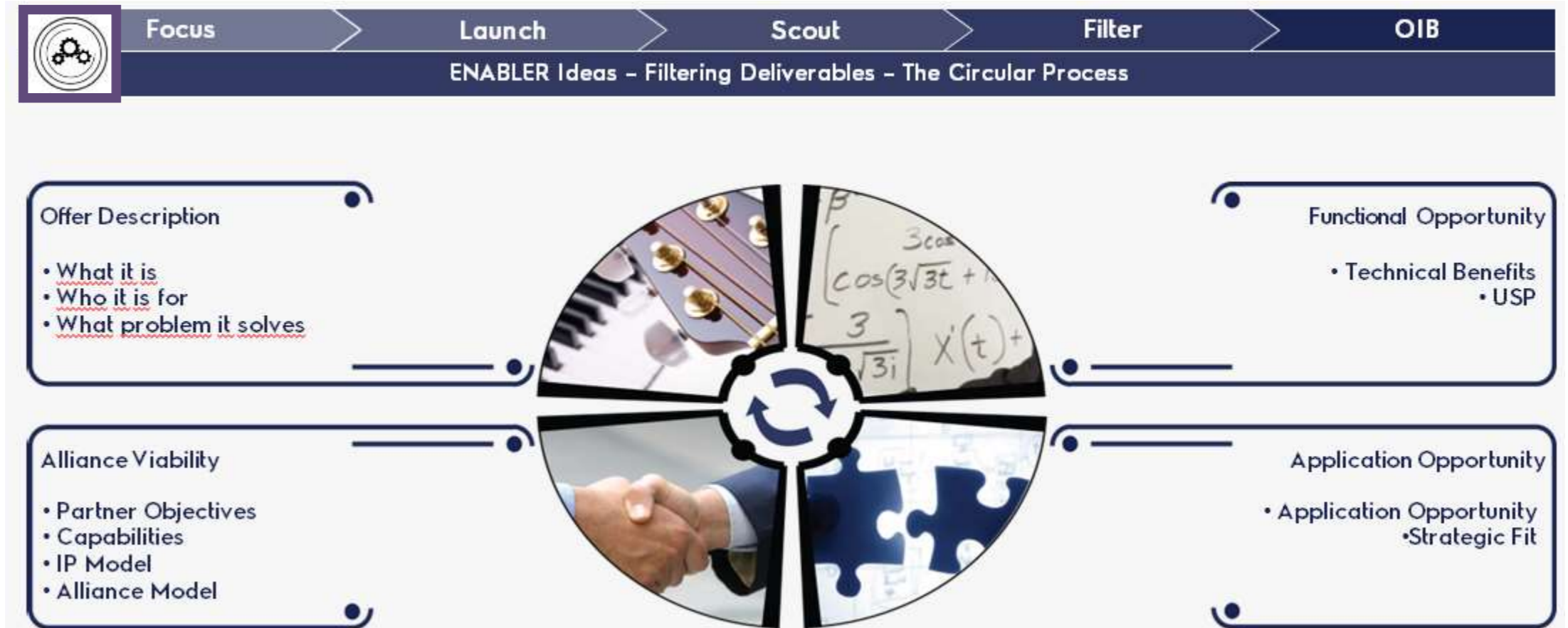
The Idea Forms

PACS deliverables



The Idea Forms

Enabler deliverables



The Rules

When

1



Nov. 2105

Ideas will be screened by Open Innovation Team and evaluated internally
@ DEC 2015

2



Jan. 2106

Idea will be screened by Open Innovation Team and evaluated internally
@ MAR 2016

3



Feb. 2016

Idea will be screened by Open Innovation Team and evaluated internally
@ MAR 2016



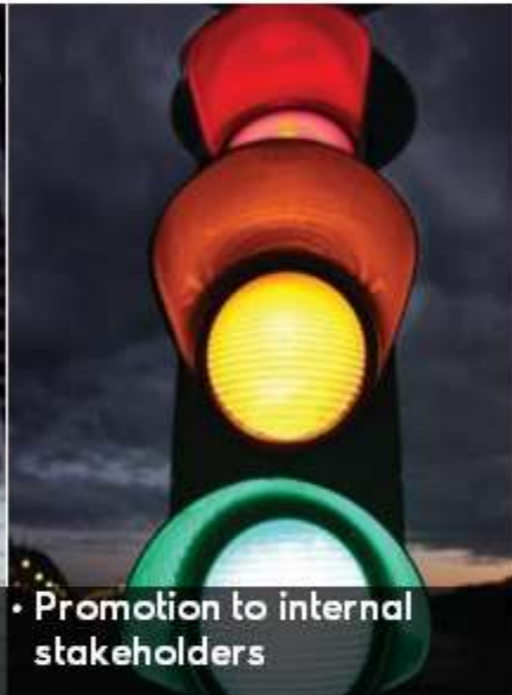
The Evaluation Process

Screen

OIB



- Deliverables Analysis
- One-Page Preparation



- Promotion to internal stakeholders

Who:
Open Innovation team
Stakeholders

What:
Evaluate & Decide upon
Deliverables

- Uniqueness
- Application/ Business Opportunity
- Strategy Fit
- Level of readiness

When:
OI & Stakeholders before and
during decisional gate



The Feedback



What

The evaluation process concludes with

1. Idea is Passed

It fits into our Innovation Focus
Collaboration may follow according to
collaboration types

2. Idea is Check

Additional information, time, investigations are needed
before the company is able to take a final decision

3. Idea is Rejected:

When there is not interest to proceed with any collaboration
due to limited or missing, Strategic fit, Business/Application
opportunity, Consumer/Functional Opportunity, concrete
alliance possibilities

When

Feedback can be provided at several stages
after the submission:

- During OI Screening activities **before** the
decisional gate
- **After** the decisional gate

Time for providing a conclusive decision may
vary from

- 2 weeks after submission
- 3-9 months after the Decisional Gate (OIB)



The Alliance

Collaboration Opportunities



What

Types of collaboration:

- Licensing
- R&D Co-Dev
- Supplying
- Prototyping

.....



When

Collaboration starts with agreement

Potential new collaborations may be signed after idea is passed into company business plan and according to the level of readiness of the proposal, company business priority/interest, idea value





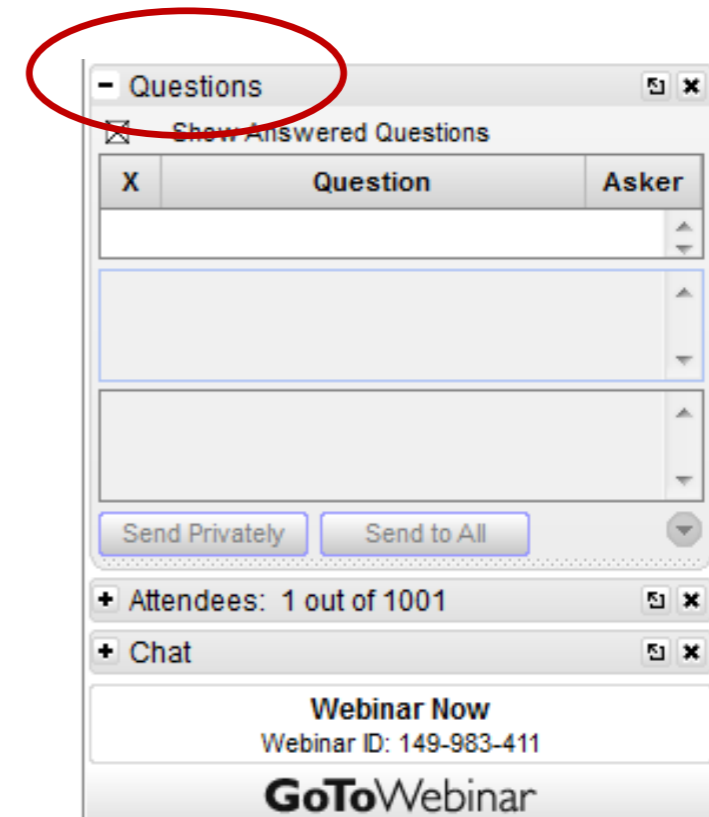
THANK YOU!!

For your.....

Attention
Questions
Submission
Collaboration
Openness

Questions & Answers

- Ask your questions now! Use the Questions Panel on the right side of your screen.
- **All questions and comments will be recorded.**
- A recording of the webinar and slides will be posted on uidp.org after the webinar and a link will be sent to all attendees.





Mark your calendars!

UI  Project Summit

University of Arizona, Tucson
January 21- 22, 2016



Mark your
calendars!

UIDP

22

Lincoln, NE

April 12 – 14, 2016

Thank you for participating!

Please fill out our survey!

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Washington, DC 20036

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Industry Demonstration
Partnership (UIDP)

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