



EMC²

INNOVATION
NETWORK

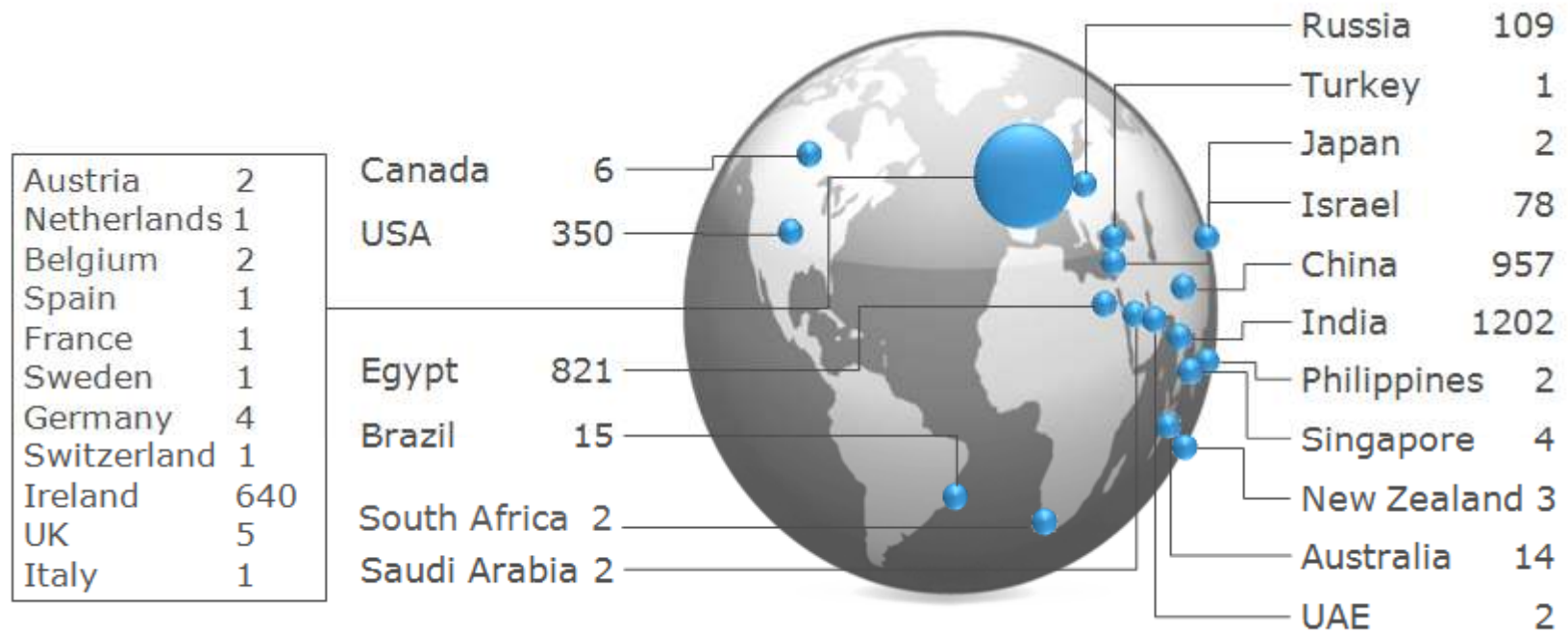
INNOVATION @ EMC

Calvin Smith, Principal Manager, Global Innovation

EMC²

Innovation Roadmap

EMC's International Idea Contest & Innovation Pipeline



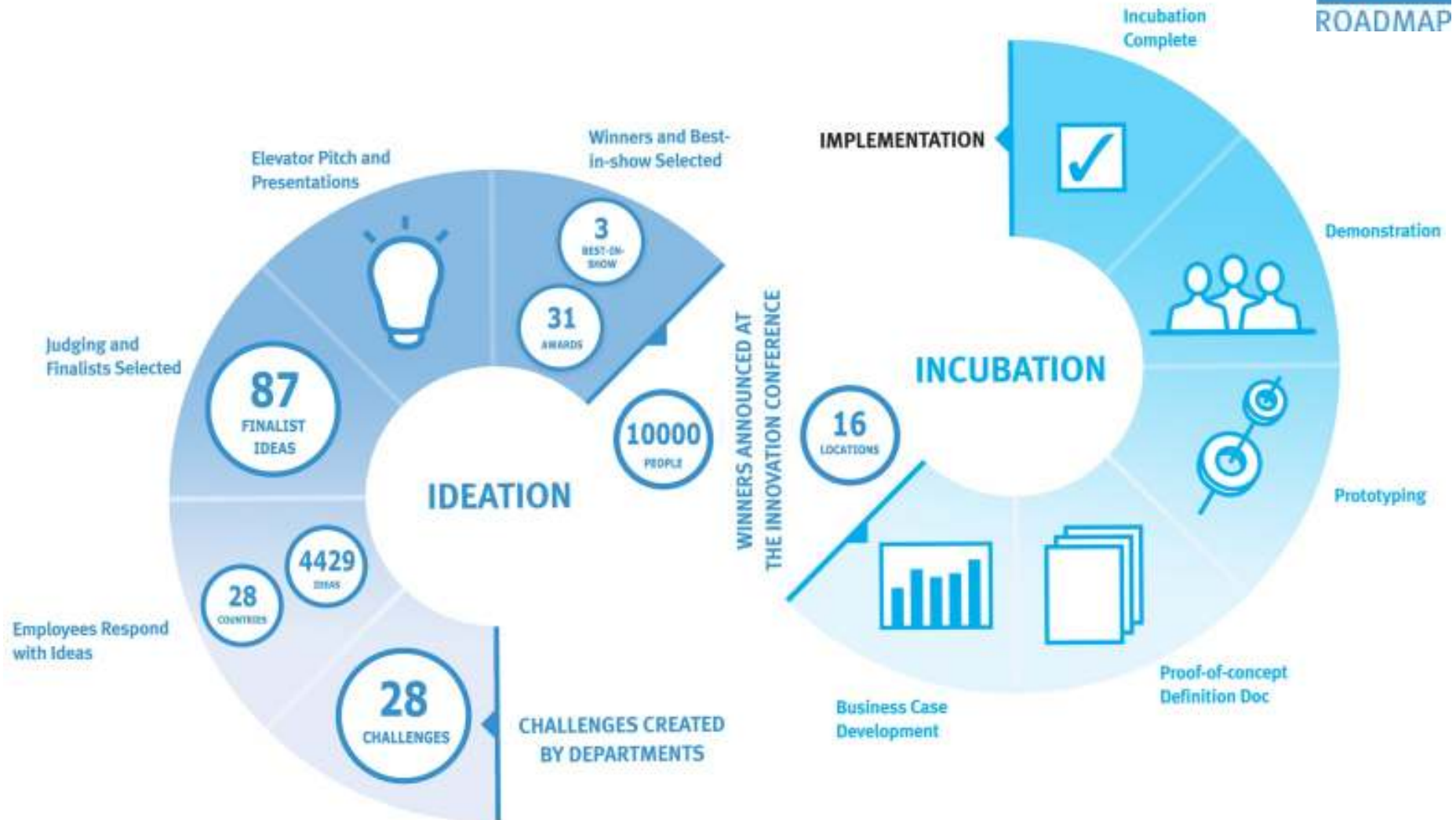
2013 ROADMAP
4,429 IDEAS FROM
28 COUNTRIES

SUBMITTED AGAINST
28 CHALLENGES

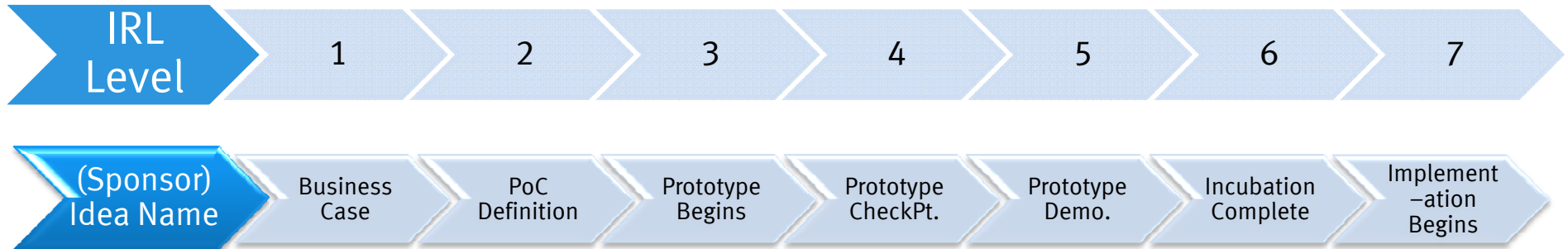
EMC²

Innovation Roadmap

The Complete Picture



Incubation Readiness Levels



1. **Business Case:** Completion of Business Case document (*Why* should the idea be incubated).
2. **Proof of Concept Definition:** Completion of Proof of Concept Definition document (*How* the idea will be incubated).
3. **Prototype Begins:** Actual Prototype/Pilot/PoC/Development of idea begins.
4. **Prototype Checkpoint:** Partial completion of prototype – significant progress made.
5. **Prototype Demonstration:** At least one major component of prototype fully demonstrable.
6. **Incubation Complete:** Completion of working prototype.
7. **Implementation Begins:** Next steps defined – official implementation begins.

Innovation Roadmap

Ideation Phase – Roadmap Sponsors



- Business Units, Divisions, and Organizations @ EMC put out their “Sponsor Challenges” to solve their/their customer’s most pressing problems



2013 ROADMAP: 28 Sponsoring Organizations

EMC²

Innovation Roadmap

Ideation Phase

Step 2

- Employees across EMC respond to these challenges by submitting their innovative ideas to solve the problems the Sponsors pose

Step 3

- Sponsors form judging teams which best represent their entire Org., and choose 3 “finalist” ideas from the pool of ideas submitted against their challenge



EMC Innovation Showcase 2012

Please login: [Login](#)

All Submissions
Today's Submissions
Recent Submissions

Search

Sponsored Award Tags
—idea must tag at least one sponsor for award eligibility

- brs_supportability
- china_coe
- community_involvement
- cto_office
- ed_services
- egypt_coe
- environmental_stewardship
- esd
- eservices
- esg
- fdc_greenfield
- global_product_ops

144 **Allow Smartphones Wireless to save m**
Written by [heiko.josse](#) on the 12/1/12
Tags: [IT](#)

Practical problem solved:
A lot of our smart phones are d

20 comments >>

130 **Dynamic Diagnostic**
Written by [thomas.dinuio](#) [Co-au
Tags: [china_coe](#) [global_product_o](#)

Practical problem solved:
Utilizing Big Data analytics, this confidence of the overall test p
reliable solution to our customer
can pre-screen components pri

12 comments >>

Office of the CTO | Innovation Central

EMC

[Home](#) [Community](#) [Innovator](#) [Sponsor](#) [Judge](#) [Administrator](#) [Resources](#) [Contact Us](#)

Welcome, Calvin Smith

144 **Allow Smartphones Wireless to save m**
Written by [heiko.josse](#) on the 12/1/12
Tags: [IT](#)

Practical problem solved:
A lot of our smart phones are d

20 comments >>

130 **Dynamic Diagnostic**
Written by [thomas.dinuio](#) [Co-au
Tags: [china_coe](#) [global_product_o](#)

Practical problem solved:
Utilizing Big Data analytics, this confidence of the overall test p
reliable solution to our customer
can pre-screen components pri

12 comments >>

Innovation Roadmap: 2013 to launch on April 1 ---- 2013 Innovation Conference Main Stage Location is Shanghai.

For Community
Find, View and Comment on Ideas

For Innovators
Create, Save, Edit, and Submit Ideas

For Sponsors and Judges
Create Challenges, Judge Ideas and Select Finalists, Winners, Best in Show

For Administrators
Manage News on Home Page

John Rowe
Senior Vice President and Chief Technology Officer

EMC²

Innovation Roadmap

Ideation Phase

Step 4

- Finalists create “*elevator pitch*” presentations and videos, and present to their sponsors

Step 5

- Sponsors choose a winning idea

Step 6

- Innovation Network/Office of the CTO select 3 “Best-in-Show” Winners

EMC²
INNOVATION
NETWORK

Overcoming External Water Pressure in Primitive Submersibles

An Application of Compressed Air
Chuck Velt, Alice Smith, and Jim Christley



Jim Christley
System Engineer
Singapore

Alice Smith
Systems Analyst
Sydney

Chuck Velt
Manager, Q&A
Washington

EMC²
INNOVATION
NETWORK

Overcoming External Water Pressure in Primitive Submersibles

An Application of Compressed Air
Chuck Velt, Alice Smith, and Jim Christley

THE PROBLEM

A One “atmosphere” (atm) of air pressure at surface = 14.7psi

Plus one atm = 29.4psi
Plus two atm = 44.1psi
Plus three atm = 58.8psi
Plus four atm = 73.5psi

B At sea level, internal air pressure equals external water pressure

1 atm
Water cannot enter

At 132 feet deep, internal air pressure of 1 atm is overcome by external water pressure of 5 atm

EMC²
INNOVATION
NETWORK

Overcoming External Water Pressure in Primitive Submersibles

An Application of Compressed Air
Chuck Velt, Alice Smith, and Jim Christley

THE SOLUTION

C Air is pumped into the sealed submersible while dockside until internal pressure is greater than water pressure at anticipated depth

5 atm
Water cannot enter

D Tanks of compressed air are loaded aboard the submersible ... which dives

Compressed air is released to pressurize the submersible at depth

5 atm

EMC²
INNOVATION
NETWORK

Overcoming External Water Pressure in Primitive Submersibles

An Application of Compressed Air
Chuck Velt, Alice Smith, and Jim Christley

THE BENEFITS

The creation of “ambient plus” atmosphere inside a submersible permitted the deployment of salvage and military divers, and facilitated exploration of the ocean and river depths.

Innovation Roadmap

Ideation Phase



Step 7

- All winners are announced at the Innovation Conference



END Ideation Phase

EMC²

Innovation Roadmap

Incubation Phase: Incubation Readiness Levels



IRL 1

- **Business Case:** Completion of Business Case document (*Why* should the idea be incubated)

Think like an Entrepreneur

Innovation
(Idea Itself)
Industry
(& Target Market)
Investment
(& Benefits)



EMC²

Innovation Roadmap

Incubation Phase: Incubation Readiness Levels



- **Proof of Concept Definition:** Completion of Proof of Concept Definition document (*How* the idea will be incubated)

Think like a Project Manager

Purpose
(The Intro. & Goals)
Project/
Prototype
(The Work)
Pilot
(The Test)
Postscript
(The Conclusion)



Innovation Roadmap

Incubation Phase: Incubation Readiness Levels

IRL 3

- **Prototype Begins:** Actual Prototype/Pilot/PoC/Development of idea begins

IRL 4

- **Prototype Checkpoint:** Partial completion of prototype – significant progress made

IRL 5

- **Prototype Demonstration:** At least one major component of prototype fully demonstrable



Innovation Roadmap

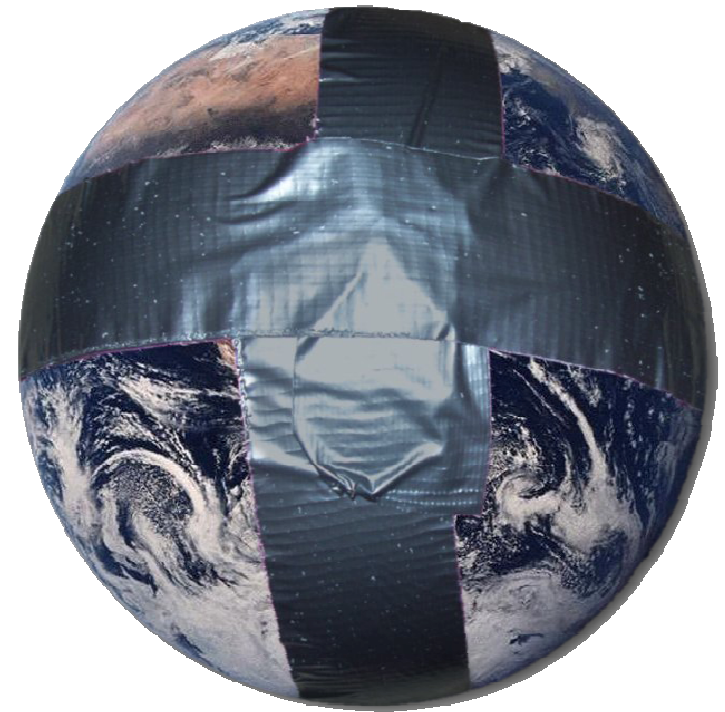
Incubation Phase: Incubation Readiness Levels

IRL 6

- **Incubation Complete:** Completion of working prototype

IRL 7

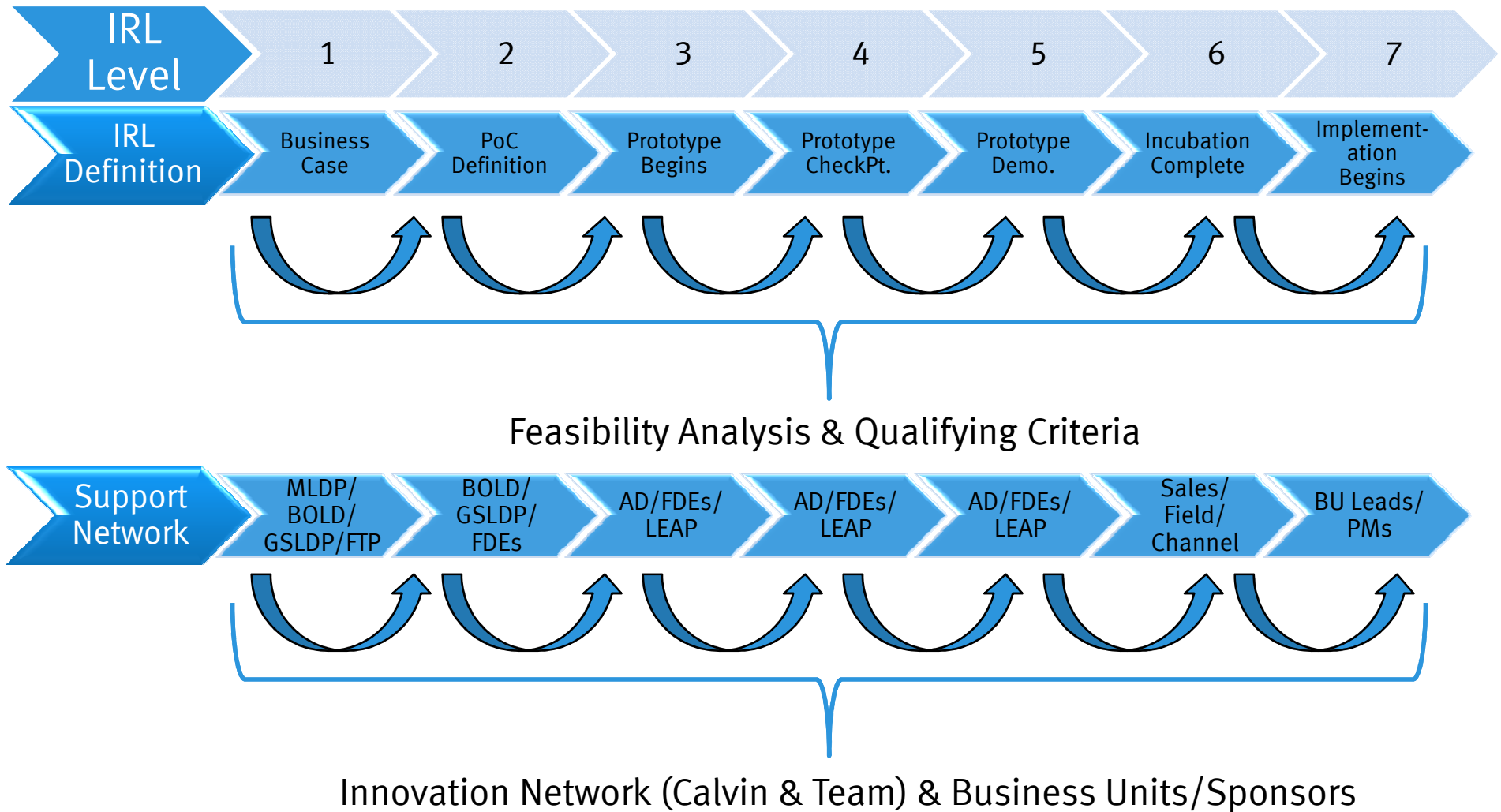
- **Implementation Begins:** Next steps defined – official implementation begins



END Incubation Phase

Innovation Roadmap

Incubation Phase: Support Network



ROI Metrics

Revenue Generation

- Ideas which have directly contributed to newly realized revenue for EMC.
- Measurements: Exact financial contribution (\$)

Cost Savings/Total Cost of Ownership Reduction:

- Ideas which have helped EMC to realize some form of substantial cost savings.
- Measurements: Specific cost savings per employee/unit (\$), Man hour reductions, Juxtaposition to cost of buying technology, etc.

Increase in TCE

- Ideas which significantly improve customer sentiment for a particular product/service/solution.
- Measurements: Employee satisfaction rates, Product net promoter scores, Blogosphere sweeps, Significant product feature add-ons

Productivity Improvement (via Process Improvement)

- Ideas which have directly improved the way that processes work, and/or the way that things are done at EMC, resulting in improvements in productivity.
- Measurements: Increased turnaround time, Reduced cycle time ratio, Reduced downtime, Increased availability/utilization

Innovation Measurements

- Ideas which have changed the way that people think about, or approach a relevant workstream either within EMC, or in the IT Industry as a whole.
- Measurements: Patents created/issued, White papers published, Conferences spoken at, New product roadmaps affected

External Publicity/PR

- Ideas which have gained significant traction with regard to external awareness.
- Measurements: Press releases, Website/blog mentions, Periodical publications, etc.

Qualitative Metrics

THANK YOU

community.emc.com/go/innovation
innovation@emc.com