Culture and Commitment to Innovation

- 1879: First glass envelope for Thomas Edison’s light bulb
- 1915: Heat-resistant Pyrex® glass
- 1947: Processes for mass producing the television bulb
- 1970: First low-loss optical fiber
- 1972: Ceramic substrates for automotive catalytic converters
- 1984: AMLCD glass for computers and large screen TVs
Industrial Innovation

The Need to Grow through Innovation and Create the New … Drives Our Actions
Innovation Model – Integrating Science and Markets

Science Base
Market Knowledge
Invention
Product Development

Create New Business Base

Process Development
Application Development
Customer Process Development
Plant Support
Customer Support

Optimization

Information and Knowledge

Corning Restricted
Innovation Process Model

- Explore
  - Markets
  - Customers
  - Universities
  - National labs
  - Research institutes
  - Internal labs

- Discover
  - Recognize & apply discoveries
  - Formulate project set

- Projects
  - Sort and Select
  - Shape
  - Resource
  - Manage through multiple stages of development

- Commercialize
  - Talent from all disciplines
  - Capital to scale discovery
  - Global execution
  - Engineering

- Grow
  - Well integrated strategic plan
  - R&D
  - Markets
  - Businesses

- Optimize
  - Extend the respective technology curves of each business

- Create Next Opportunity
  - Long range strategic planning
Innovation Process Model

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  - Markets
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- Optimize
  - Extend the respective technology waves of each business

- Create Next Opportunity
  - Long range strategic planning

Investment Curve
Innovation Process Model

• Defines a pipeline

• Dictates activities and skills

• Requires integration of skills / capabilities to create uniqueness and value
Innovation Pipeline Dynamics

Research
- Identify
- Many High Value Ideas

Development
- Select Highest Value Opportunities;
- Optimize Value Prop

Engineering
- Scale Up for Commercial Capacity

Commercialization
- Life Cycle Management

Customer & Market Understanding

External technology sources
Spin-out / New Entity
External partnerships / joint ventures
Major Opportunities

Licensing
Innovation Pipeline Dictates Activities

I. Build Knowledge
II. Determine Feasibility
III. Test Practicality
IV. Prove Profitability
V. Manage Life Cycle

Risk and Uncertainty → Knowledge and Cost

8 – 10 years

Marketing
Technology
Manufacturing

Science & Technology
Corning Restricted
And Drives Integration of Skills and Capabilities to Create Uniqueness and Value

Core Capabilities

- Inorganic Materials and Processes
- Organic Materials and Processes
- Semiconductor Materials and Processes
- Thin Films and Surface Sciences
- Optical Physics and Integration Technologies
- Biochemical Sciences
- Characterization and Modeling
Ideas, Ideas, Ideas – The Front End Differentiates

Research
- Identify
- Many High Value Ideas

Development
- Select Highest Value Opportunities;
- Optimize Value Prop

Engineering
- Scale Up for Commercial Capacity

Commercialization
- Life Cycle Management

Customer & Market Understanding

Ideas
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Major Opportunities

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- Spin-out / New Entity

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Ideas Come From Many Sources

- Early Stage Marketing
- Internal Labs
- Research Institutes
- Universities
- Government
- Customers
- Global

Exploratory Research

New Business Creation
Different Skills Needed At Different Innovation Stages

Idea/Feasibility

- Creative
  - People critical
  - Active change
  - Ambiguity
  - Many trials - low expense
  - Many failures
  - Arguments

- Tactical
  - Organizational critical
  - Controlled change
  - Certainty
  - One plan - high capital
  - One opportunity for success
  - Consensus

Implementation

II

III

IV

V

Science & Technology
Corning Restricted
Many Compete with Superior Execution Skills

Creative
- People critical
- Active change
- Ambiguity
- Many trials - low expense
- Many failures
- Arguments

Tactical
- Organizational critical
- Controlled change
- Certainty
- One plan - high capital
- One opportunity for success
- Consensus

Science & Technology
Corning Restricted
Creative Skills Define the Quality of Innovation

Idea/Feasibility

I

II

III

Implementation

IV

V

Creative

People critical
Active change
Ambiguity
Many trials - low expense
Many failures
Arguments

Tactical

Organizational critical
Controlled change
Certainty
One plan - high capital
One opportunity for success
Consensus
Skills to Mine the Gap are the Most Challenging

Idea/Feasibility

I
II
III

Creative

“Minding the Gap”

People critical
Active change
Ambiguity
Many trials - low expense
Many failures
Arguments

Tactical

Organizational critical
Controlled change
Certainty
One plan - high capital
One opportunity for success
Consensus

Science & Technology
Corning Restricted