



# **OPEN INNOVATION SUCCESS STARTS WITH A WELL STATED PROBLEM:**

**A PROBLEM DEFINITION WEBINAR**

# SPEAKERS

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• **Denys Resnick,**  
Chief Growth Officer  
*NineSigma*



• **Mark Taylor, PhD**  
Technical SME &  
Project Manager,  
OLED Lighting  
*Corning Incorporated*



• **Kevin Andrews, PhD**  
Senior Program Manager  
*NineSigma*

a problem  
WELL STATED  
is a  
problem  
HALF-SOLVED



## CHARLES FRANKLIN KETTERING

(AUG 29, 1876 – NOV 25, 1958)

American Inventor, Engineer, Businessman

The Holder Of 186 Patents

Founder Of Delco

Head Of Research At General Motors ( 1920-1947)

Developed The Electrical Starting Motor,

Leaded Gasoline, Freon Refrigerant

Duco Lacquers And Enamels

The "Bug" Aerial Torpedo,

Founded The Kettering Foundation

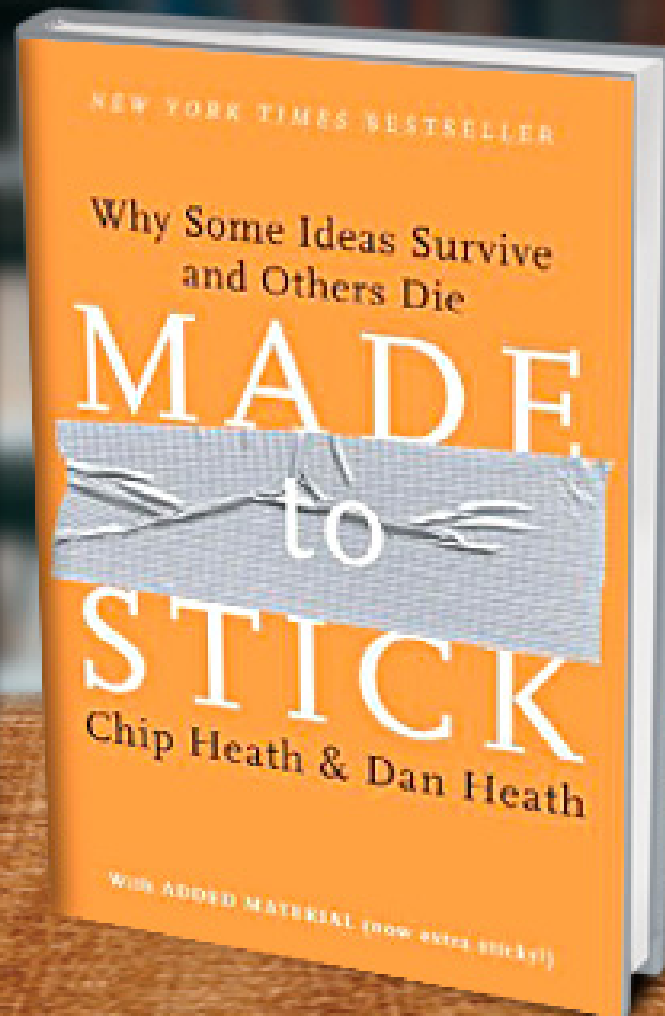
## LET'S TALK COGNITIVE BIAS

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The common tendency of filtering input and output through one's own likes, dislikes, and experiences to acquire, retain, and process information.

# COGNITIVE BIAS1: CURSE OF KNOWLEDGE

*“Here’s the great cruelty of the **Curse of Knowledge**: The better we get at generating great ideas—new insights and novel solutions—in our field of expertise, the more **unnatural** it becomes for us to communicate those ideas clearly”*



## EXAMPLE OF NEED STATEMENT: CHEMICAL (BEFORE)

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“We’d like to find a substitute for a white pigment in paint.”



## EXAMPLE OF NEED STATEMENT: CHEMICAL (AFTER)

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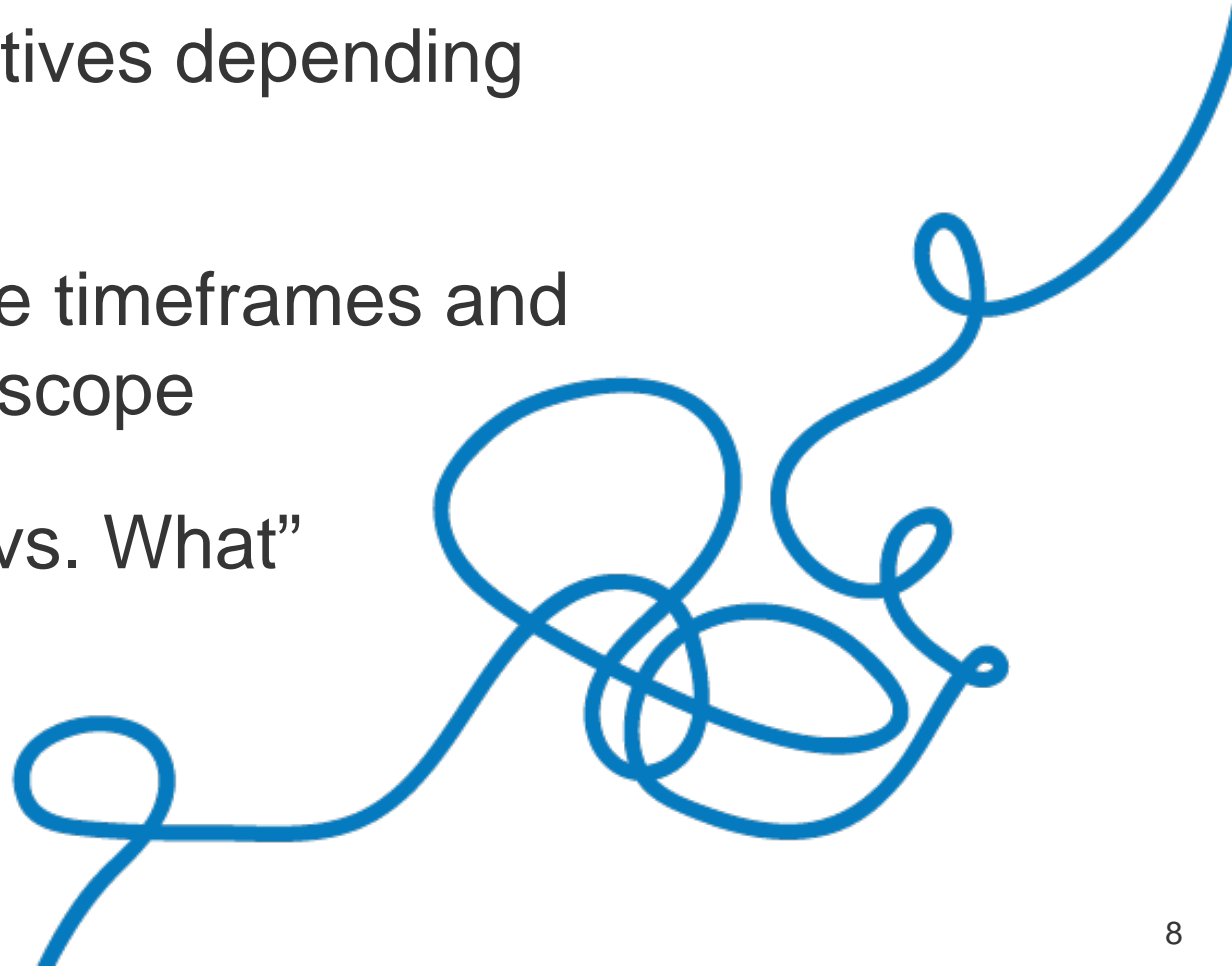
A close-up photograph of a scientist wearing a white lab coat, safety goggles, and a blue hairnet. The scientist is holding a clear glass Erlenmeyer flask with their right hand, which is wearing a blue nitrile glove. The flask contains a vibrant pink liquid. The background is a soft-focus laboratory setting.

“Our Client is looking for novel optical materials with strong light scattering properties.”

# PROBLEMS ARE LIKE SPAGHETTI

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- » Messy, complex interdependencies
- » Competing objectives depending on perspective
- » Bound by multiple timeframes and unlimited/limited scope
- » Asking for “How vs. What”





## KEY TAKEAWAYS

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- » Repeatable and systematic approach for evaluating and framing key problems
- » Integrate perspectives from diverse collaborators and open up thinking beyond conventional solution paths
- » Bound the problem such that it can be addressed within your target time horizon
- » Lead with a “call to action” that does not prescribe the solution
- » Create a pathway for tangible outcomes by establishing evaluation criteria that support next steps in your technical development process

# NINESIGMA METHODOLOGY

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- 1 Identify collaborators and stakeholders
- 2 Problem definition discussion to understand objectives and limitations
- 3 Launch Challenge
- 4 Identify and select novel approaches
- 5 Action plan

**PRIZE**  
**\$10K** each  
for up to  
5 winners

**WINNERS**  
**3**

Lighting without  
a Bulb **Contest**

## NEED

Enable OLED lighting integration into lighting devices, fixtures, furniture and luminaires.

## CHALLENGE

OLED lighting applications that highlight the special features of OLED technology: thin form factors, lightweight lighting elements, cool to touch, and high light quality.

## IMPACT

### DESIGN SOLUTIONS

Designs that integrate Organic Light Emitting Diode (OLED) technology into functional luminaires and other practical lighting applications.

### COLLABORATORS

Corning 

OLEDWorks 

### OBJECTIVES/LIMITATIONS

Leader in specialty glass, ceramic and optical physics

Creators of world class, cost-effective lighting solutions

### APPLICATIONS

Architecture

Building Materials

Furniture

### MARKET SEGMENTS

(Including, but not limited to)

Hospitality

Retail

Transportation

Commercial

Residential

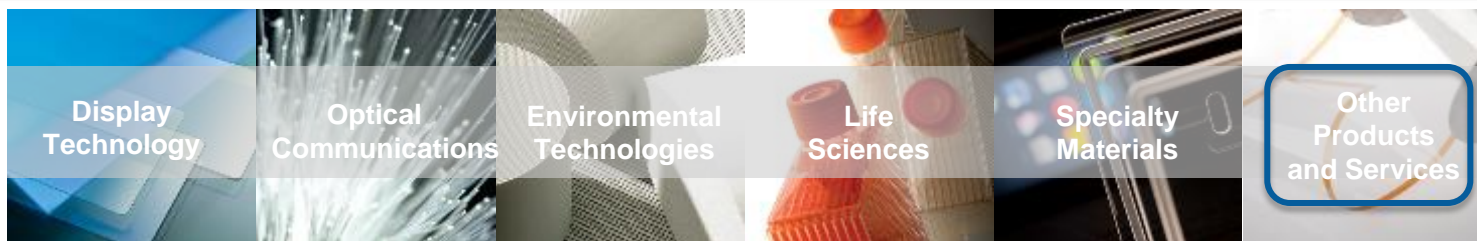
# INTRODUCTION TO CORNING INCORPORATED



- ❑ For more than 160 years, Corning has applied its unparalleled expertise in specialty glass, ceramics, and optical physics to develop products that have created new industries and transformed people's lives.
- ❑ Corning succeeds through sustained investment in R&D, a unique combination of material and process innovation, and close collaboration with customers to solve tough technology challenges.



## Corning Market Segments and Additional Operations



# LIGHTING WITHOUT A BULB DESIGN CONTEST

Lighting became a significant business for Corning in 1879 when Thomas Edison asked us to make the glass encasement for his incandescent light.

Since then lighting has gone through a transformation:

- Light bulbs to LEDs
- And now, LED to OLEDs



## **Opportunity:**

Lighting is becoming more than a source of functional light and could be an important business for Corning.

## **Problem Definition:**

Aesthetics, design and integration now play critical roles in consumer applications, appeal and demand.

- OLED value props are positioned more around aesthetic features in comparison to LED's.

How can we educate and reach a market that values OLED lighting features?



# LIGHTING WITHOUT A BULB DESIGN CONTEST

CORNING



## GOAL

- Identify innovative designs or new applications for OLED panels
- Identify potential creative partners
- Promote awareness of Corning as a leader in open innovation and supplier of materials for efficient lighting without bulbs

## CRITERIA

- Thin
- Cool-to-the-touch
- Lightweight
- Light Quality
- Thinness

## BACKGROUND

- Corning has a high quality subcomponent to permit a new generation of efficient lighting products to surpass LED as a lighting technology
- Increasing awareness and use through creative designs will drive growth in adoption and lower costs

## DESIGNER TOOLKIT

- Designs could use any of the OLEDWorks OLED light panels currently available and needed to demonstrate inclusion of OLED drivers and power supplies
- Designs were evaluated on uniqueness, prospective marketability and practicality, aesthetics, ability to enhance user experience, and path to fabrication

# LIGHTING WITHOUT A BULB DESIGN CONTEST

CORNING



Corning and OLEDWorks engaged NineSigma to help identify use options for OLED lighting in commercial and retail markets.

Through the **Lighting Without a Bulb Contest**, we wanted to work with students and designers to imagine how OLED lighting can be integrated into lighting devices, fixtures, furniture, and luminaires to exploit the thin form factor, light weight, cool touch, and high light qualities of OLED technology.

## AWARDS & WINNERS

- The contest launched April 8, 2016 and ran through June 30, 2016.
- 48 submissions were received from 17 countries. Contestants submitted designs based on the following criteria: design uniqueness, prospective marketability and practicality, aesthetics, path to fabrication, and ability to enhance user experience.
- Three winners were each awarded a cash prize of US \$10,000:
  - Matthew Boyko, Creative Society, USA
  - Michael Garner, MSG Lighting, USA
  - Sadyr Khabukhayev, Izmir Institute of Technology, Kazakhstan

## KEY TAKEAWAYS

- Corning and OLEDWorks received a number of different designs and were pleasantly surprised by the variety, quality, creativity and number of entries.

# MEET THE WINNERS

Join us in congratulating our **winners!**

- » **MATTHEW BOYKO** - Society Creative | USA
- » **MICHAEL GARNER** - MSG Lighting | USA
- » **SADYR KHABUKHAYEV** - Izmir Institute of Technology | Kazakhstan



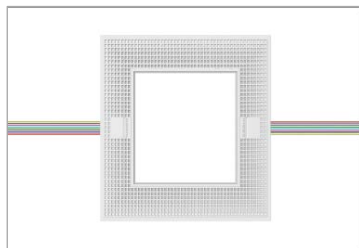
**Matthew Boyko**  
Society Creative  
USA



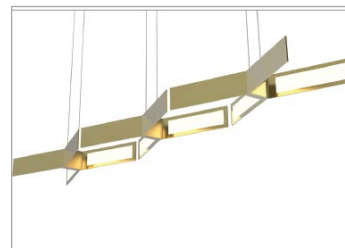
**Michael Garner**  
MSG Lighting  
USA



**Sadyr Khabukhayev**  
Izmir Institute of Technology  
Kazakhstan



>> Surface Integrated Socket



>> Hexy OLED Luminaire



>> Greenlight

# NINESIGMA METHODOLOGY

## PROBLEM DEFINITION WEBINAR

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- » Engage collaborators in a shared dialog
- » Envision “success”
- » Define problem and iterate “ah hah” refinement loop
- » Develop solution scenarios and channels

# ENVISION “SUCCESS”

- » Design with the end in mind
- » What can each collaborator contribute?
- » Anticipate judging
- » Consider success across a time continuum
- » Propose multiple solution channels and scenarios
- » Action plan

**CONTEST #2240200**

**CORNING**

**OLEDWorks**  
Naturally Illuminating

**Lighting without a Bulb Contest**

Contest Summary | Terms & Conditions | Community Forum

**Lighting without a Bulb**

OLED light panels naturally produce diffuse light with little or no heat in very thin form factors. Moreover, the light produced has a broad color spectrum, similar to that of an incandescent lamp, resulting in good color quality and a pleasant user experience. On the other hand, LED light luminaires tend to produce glare and heat without auxiliary optics to convert them to a diffused source, thereby limiting their integration with building materials and furniture.

Corning is a leader in specialty glass, ceramics and optical physics. Corning is collaborating with OLEDWorks, creators of world class, cost-effective lighting solutions, to develop OLED components. They invite students and designers to imagine how OLED lighting can be integrated into lighting devices, fixtures, furniture, and luminaires. Learn more about Corning and OLEDWorks online at [www.corning.com](http://www.corning.com) and [www.oledworks.com](http://www.oledworks.com).

**THIS CONTEST IS CLOSED TO SUBMISSIONS**

**ABOUT THE CONTEST**

NineSigma, representing Corning Incorporated and OLEDWorks, invites design proposals for OLED lighting applications that highlight the special features of OLED technology: thin form factors, low weight lighting elements, cool to touch, and high light quality.

**AWARD**

This challenge seeks creative lighting designs that integrate Organic Light Emitting Diode (OLED) technology into functional luminaires and other practical lighting applications. Up to five winners will be awarded cash prizes of US \$10,000 each.

Further interaction with respondents may occur after award of prize. Such interactions may include, but are not limited to, the opportunity to fabricate a prototype using sponsor-supplied components. Funding is to be negotiated.

**TIMELINE**

Event	Date
Launch	April 8, 2016
Submission Deadline	June 30, 2016 5:00 PM EDT
Winners Announced	September 21, 2016

**MEET YOUR NINESIGMA MODERATOR**

**Kevin Andrews, PhD**  
Senior Program Manager

Welcome to our Design Contest!

Questions? Feel free to post a [thread](#) for the community or email us at [pro@ninesigma.com](mailto:pro@ninesigma.com).

**MEET THE CONTEST SPONSORS**

**Dipak Chowdhury, PhD**  
Division Vice President & Program Director, OLED Lighting

**Mark Taylor, PhD**  
Technical SME & Project Manager, OLED Lighting

# Q&A

## » Live Q&A with NineSigma and Corning



# LIVE Q&A WITH NINESIGMA AND CONTEST SPONSORS. SUBMIT YOUR QUESTIONS VIA THE CHAT BOX.



● **Denys Resnick,**  
Chief Growth Officer  
*NineSigma*



● **Mark Taylor, PhD**  
Technical SME &  
Project Manager,  
OLED Lighting  
*Corning Incorporated*



● **Kevin Andrews, PhD**  
Senior Program Manager  
*NineSigma*

# THANK YOU

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## CONTACT



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Chief Growth Officer

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Phone: 216-295-4812

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