


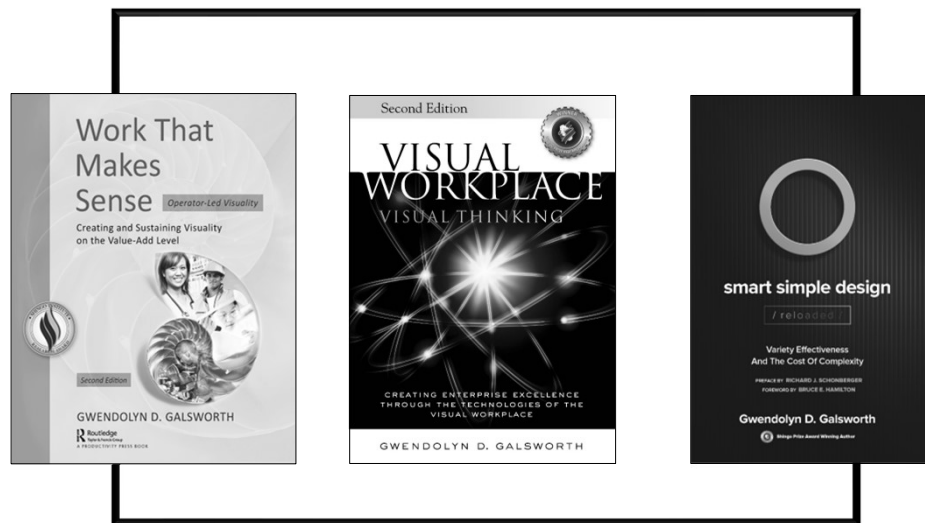


	<p style="text-align: center;">LPPDE: THE SCIENCE OF IMPROVING INNOVATION</p> <p style="text-align: center;">Visual Workplace/Visual Management: Key to a Diverse, Creative & Contributing Enterprise</p> <div style="text-align: center;">  <p><i>Diverse:</i> Varied, Assorted, Different, Dissimilar, Unlike</p> <p><i>Creative:</i> Imaginative, Inspired, Artistic, Resourceful, Innovative, Original, Ingenious</p> <p><i>Contributing:</i> Give, Share, Add, Participate, Engage, Have a Say, Supply, Fund, Provide</p> </div> <p style="text-align: center;">Gwendolyn D. Galsworth, PhD Visual Thinking Inc. ■ Visual Thinking Europe</p>	<p style="text-align: center;">THURSDAY JANUARY 12, 2023</p> <div style="text-align: center;">   </div>	
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Visual Thinking The Visual-Lean® Institute Curriculum

Track	Track Content • Courses	
Track 1	Visual Workplace/Visual Thinking & The Visual Site Assessment	
Track 2	Work That Makes Sense: Operator-Led Visuality	
Track 3	Visual Machine:® Let the Workplace Speak	Machine Lubrication: Visual & Effective
Track 4	The Visual-Lean® Office: Operational Excellence in Your Office	
Track 5	Management By Sight: Visual Displays & Visual Scheduling Boards	
Track 6	ScoreBoarding: Visual Standards & Visual Problem Solving	
Track 7	Visual Management: Metrics That Monitor/Metrics That Drive	
Track 8	Visual Leadership: Operations Template, X-Type Matrix, Systems Template	
Track 9	Perfect Quality Through Mistake-Proofing: For Engineers	



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LPPDE: Visual Workplace/Diverse, Creative, Contributing - 2




Diverse: Varied, Assorted,
Different, Dissimilar, Unlike

Creative: Imaginative, Inspired,
Artistic, Resourceful, Innovative,
Original, Ingenious

Contributing: Give, Share,
Add, Participate, Engage, Have a
Say, Supply, Fund, Provide


5



**Diversity
as a
Resource**

1

i-driven thinking



6

Aha!

The euro drops....



7

**An encounter with pink powder
and an indexed final assembly line
at Toyota in Japan, circa 1985.**



indexed final assembly line at Toyota



8



Huh?

9

Visuality's Two PRIME Principles

PRIME 1:
To TELL merely by looking



PRIME 2:
To tell the DIFFERENCE
merely by looking



10

Plainly Put:

**There is one simple reason why
a visual workplace is needed:**

People have too many questions.

Some of them are asked.

But most of them are un-asked.

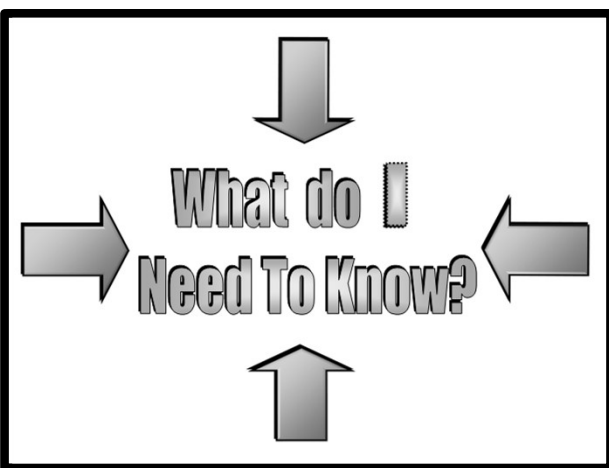
Do nothing

Make stuff up

**Only two questions
drive them all.**



11



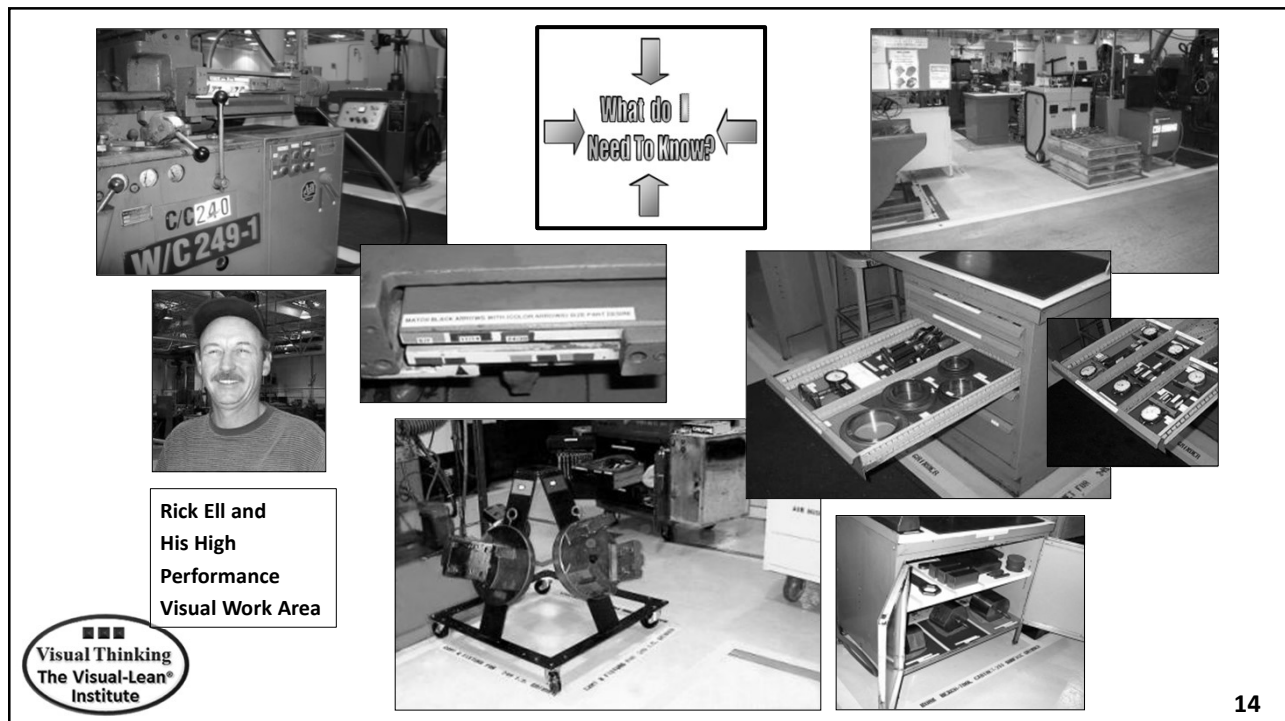
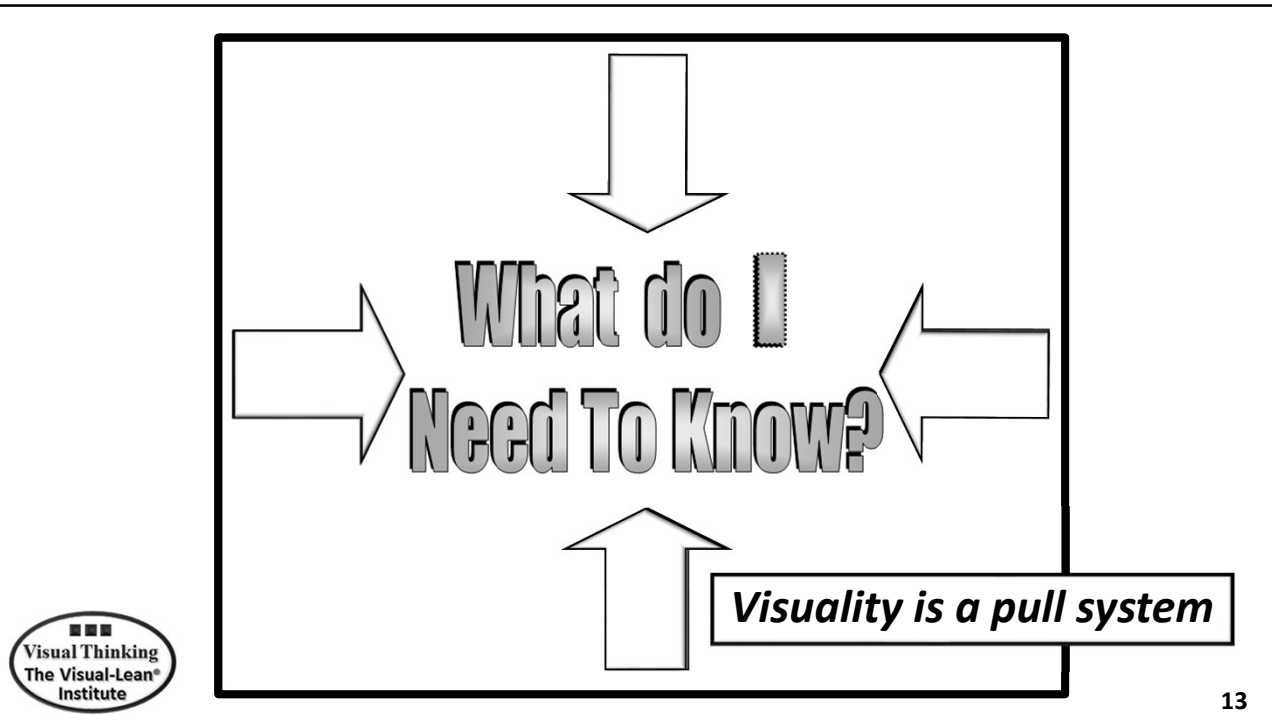
△ Question #1



The two questions that
drive the visual workplace



12



**What do I
Need To Know?**

The two questions that
drive the visual workplace

△ Question 1

Question 2 ▷

15

**What do I
Need To Share?**

16

Sheila Bowersmith
Expert Machinist/Ace Visual Thinker



Need to Know



17

Sheila Bowersmith
Expert Machinist/Ace Visual Thinker



Need to Share

Karen never has to ask
that question again...
and I never have to
answer it again.



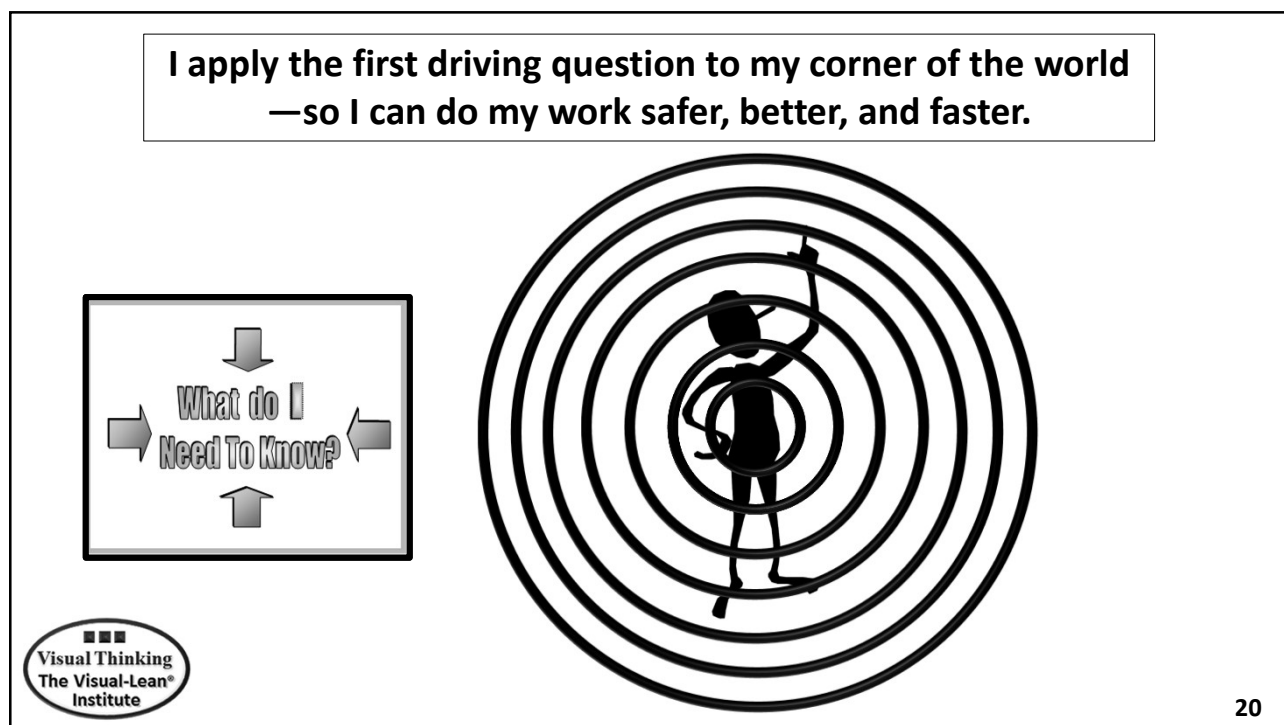
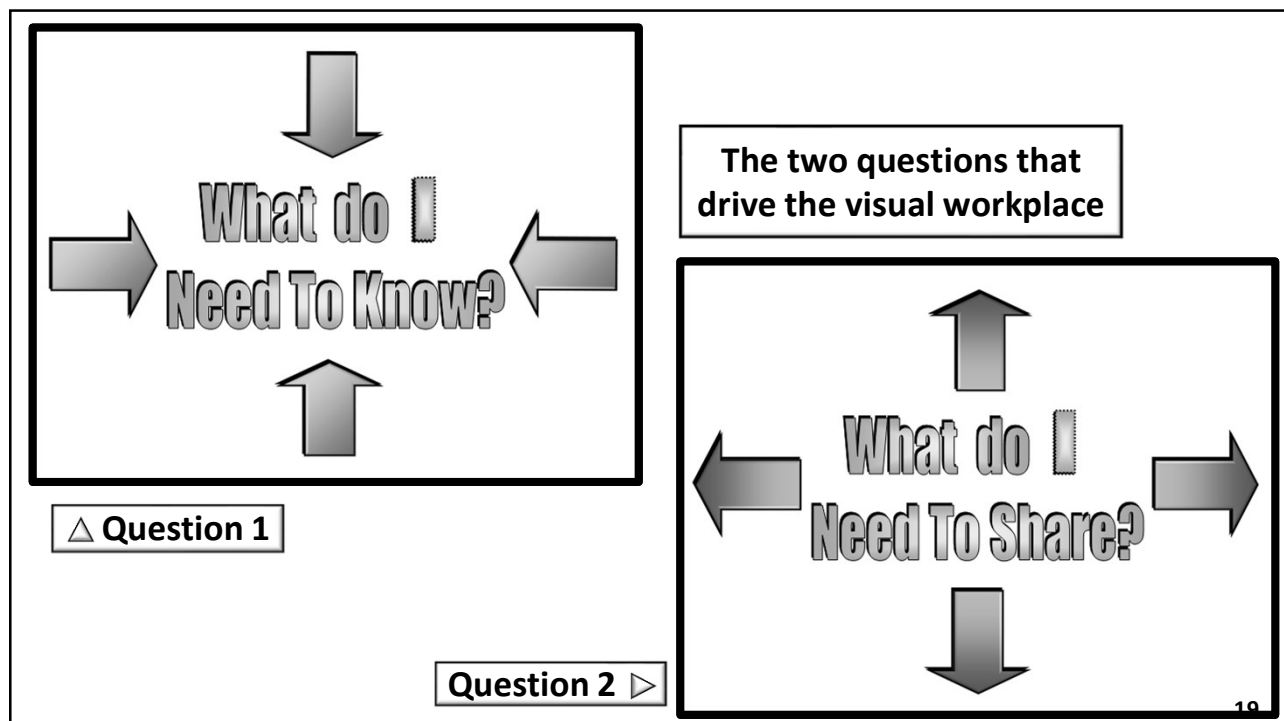
Hi Karen... Gee, may I help you in some way?

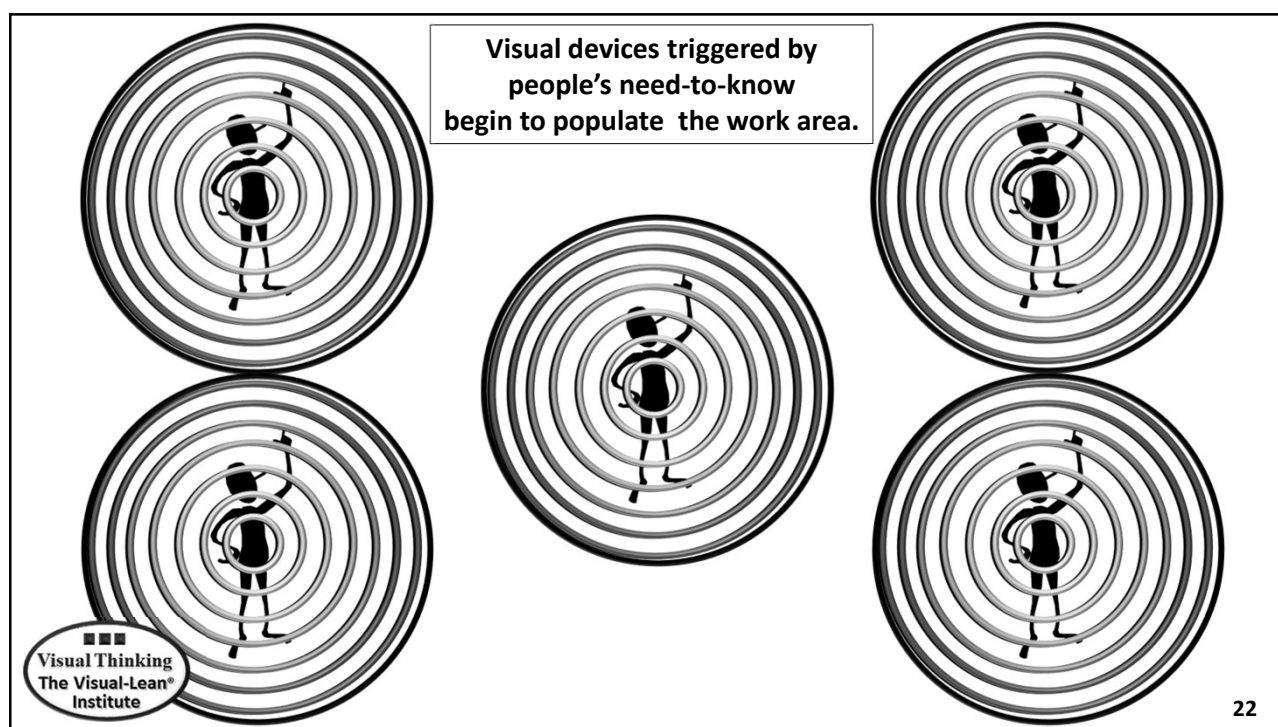
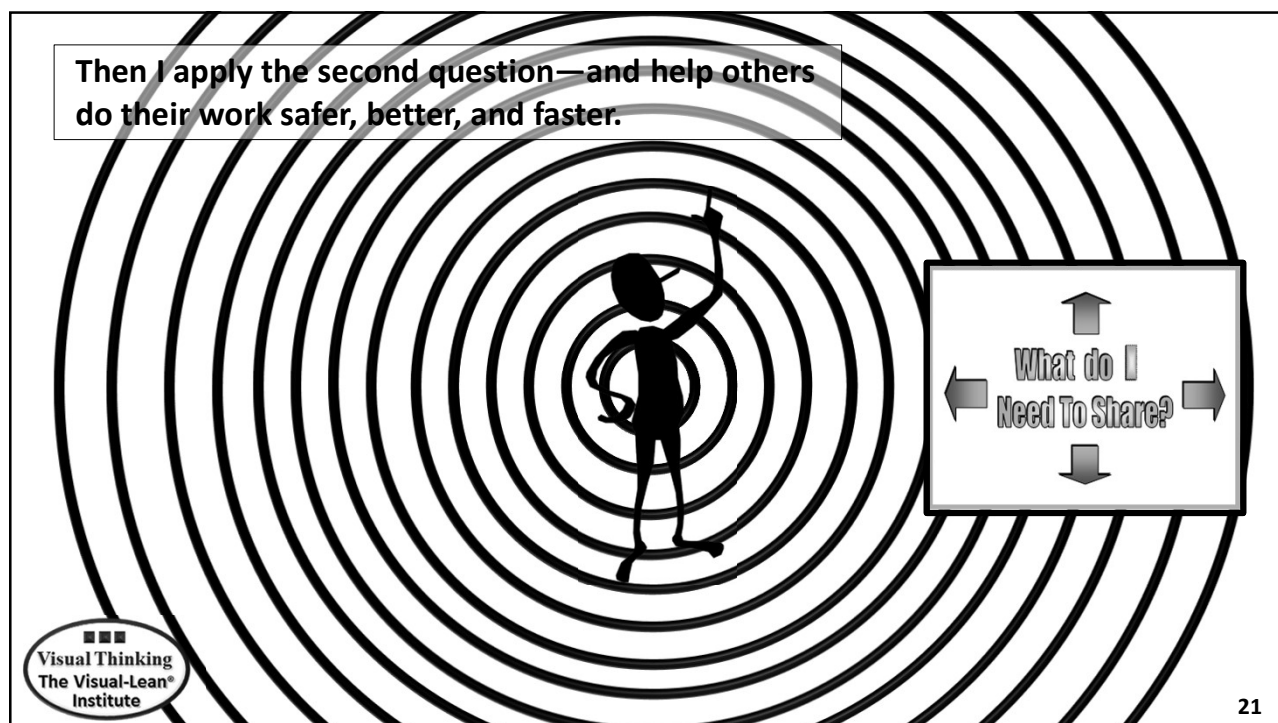


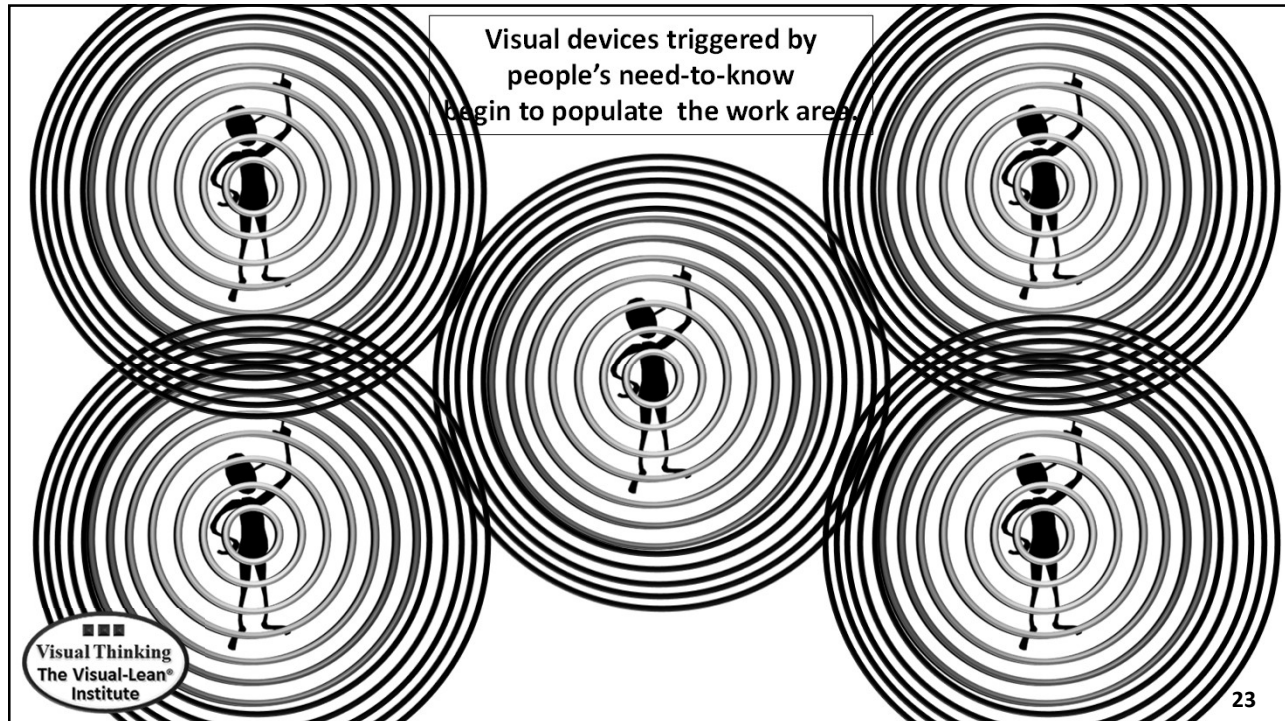
Sheila talks
to the
planner
without
saying a
word.



18







imagine

**If the answers to
all the questions in your company
were visually embedded into
the living landscape of work?**

What would you do with all that liberated time?

What would your company do?

What would you become?

What would your company become?



24

Visuality as Language

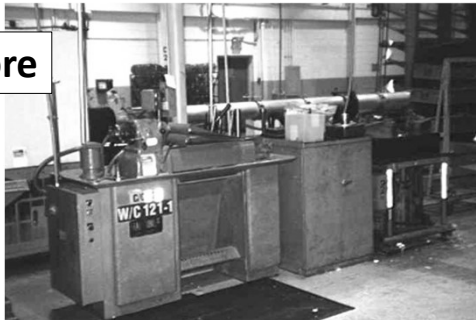
2

info deficits + motion



25

Before

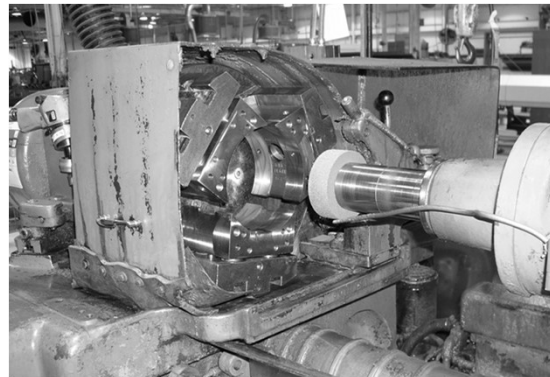


DENISON Hydraulics

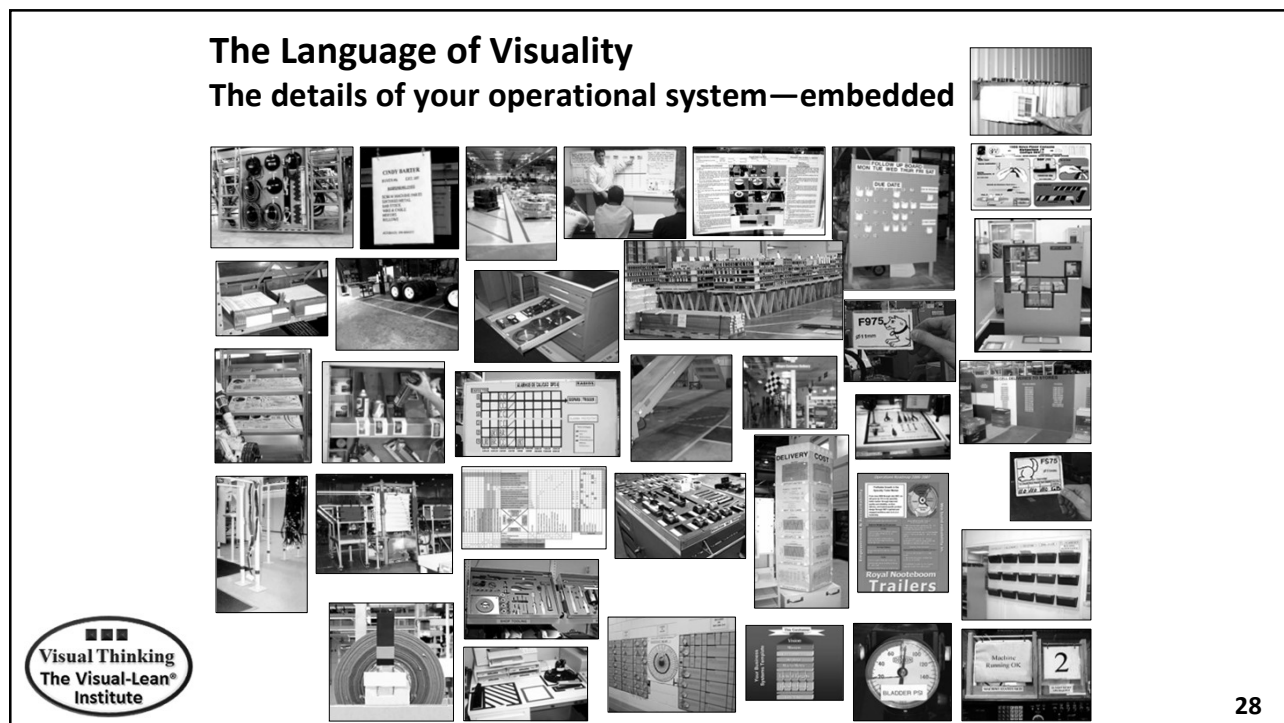
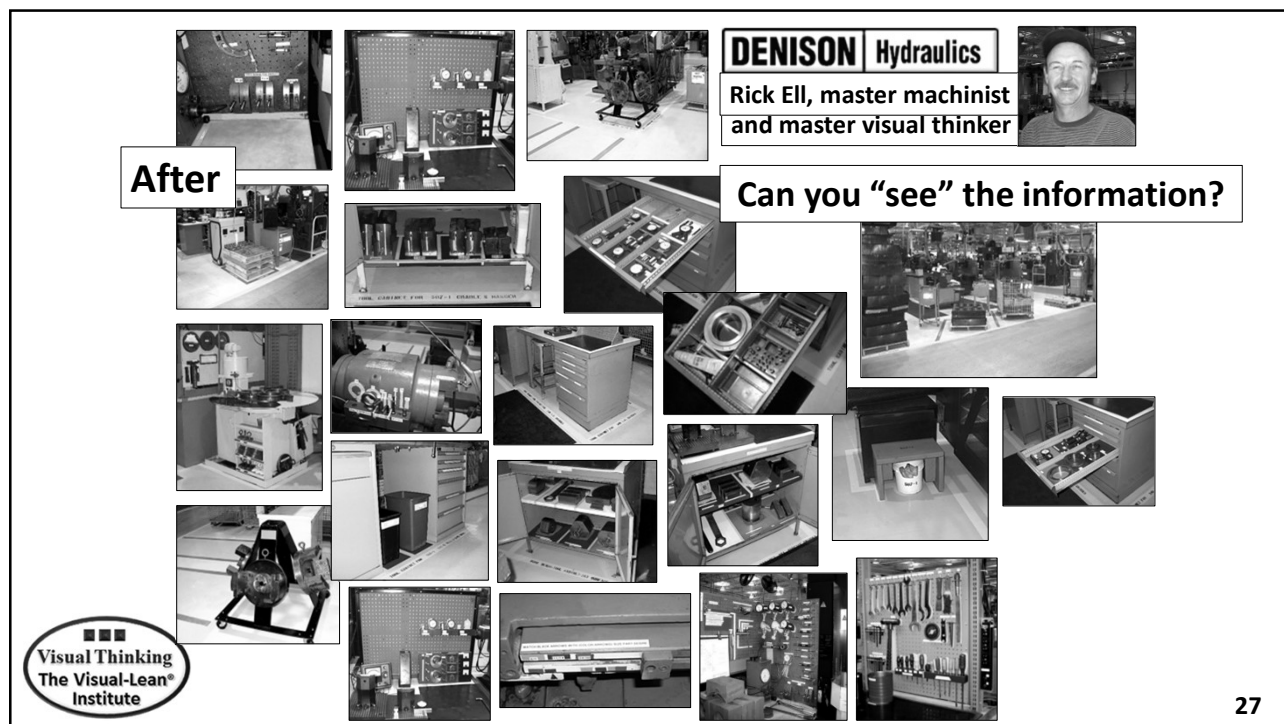
Rick Ell, master machinist



Can you “see” the information?



26



Definition of a Visual Workplace

**A work environment that is
self-ordering, self-explaining,
self-regulating, and self-improving ...**

**where what is *supposed* to happen
does happen, on time, every time,
day or night ...**

because of visual devices.



29

Definition of a Visual Device

A visual device is a mechanism or thing:

- *intentionally* designed
- to influence, direct or limit *behavior*
- by making vital information available
- as close to the point-of-use as possible
- to anyone and everyone who needs it
- without speaking a word.



30



A visual workplace is populated by hundreds
—by thousands—of visual devices,
*invented by a workforce that
knows how to think visually.*

What is Visual Thinking?

The ability of a person to recognize motion (*footprint*)
and the information deficits (*enemy*)

that trigger that motion

and then to eliminate both through solutions that are visual.



31

Definition of Motion

**Motion is:
moving without
working.**



32

Forms of Motion

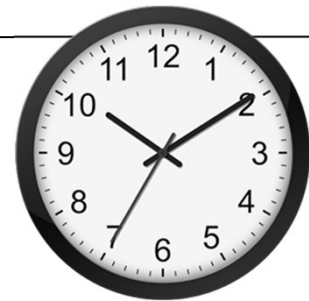
- Searching
- Looking For
- Rummaging
- Wandering
- Wondering
- Guessing
- Checking
- Re-checking
- Handling
- Handling again
- Moving again
- Counting
- Counting again
- Re-Doing
- Re-Working
- Re-Testing
- Stopping (again & again & again)
- Asking
- Answering
- Interrupting
- Waiting



Motion is anything you must do or else you cannot do your work.
But it is not your work ...

33

**Motion is
anything you have to do—
or you cannot do your work**



tick tock

but it is not your work....

tick tock

tick tock



34

Fundamental

Visuality is a system of thinking first.
Then, it is a system of doing
—a system of visual solutions.



35

**People don't come to
Toyota to work.
They come to think.**

Taiichi Ohno
co-architect with Shigeo Shingo
Toyota Production System



36

**Our behavior
changes
as a result.**



Eyes are the brain.



Touching is thinking.
Fingers are the brain.



41

Why not also at work?



42

Without a visually-based work environment,
we are
quite
literally
lost.

We have *no*
navigational
anchor.

That puts
us in a state
of risk—
high risk!



43

Visuality:
Why not
also at work?



44

Visual Management :What It Is Not

4

words matter

45

The Sami People



180 words for snow & nearly 1000 words for reindeer

46



Tells me

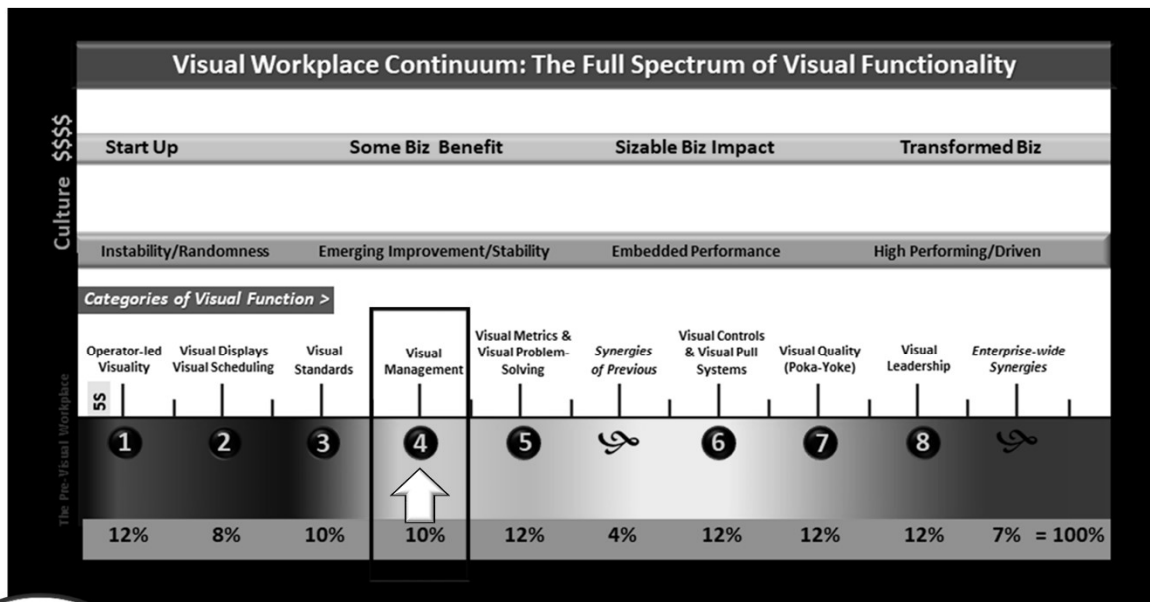
This device tells me what the right behavior is

Makes me

This device embeds what the right behavior and makes me do it



47



48

Visual Management



Both more than you think—and much less ...

49

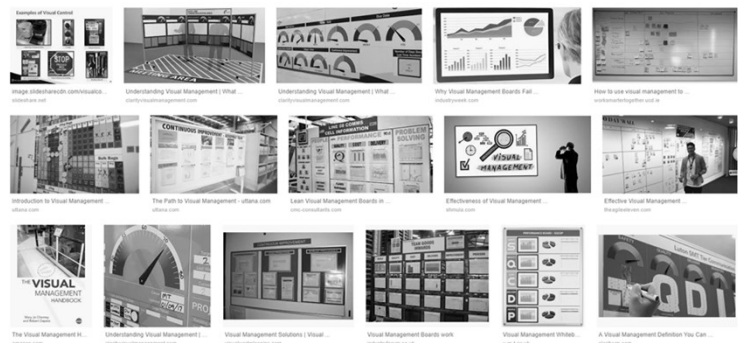
Correct

“Visual management is an essential operational tool that links data and outcomes.”

Not Correct

“As the name implies, visual management lets you manage everything in your factory visually.”

Gooooooooogle: November 2022



Correct

“Managing visually is the ability of an environment to quickly show the current status of pre-determined aspects of that environment.”

Not Correct

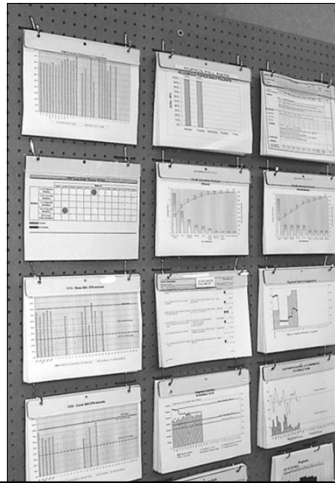
“If done well, visual management helps everyone in your factory understand and know how to fix an issue if something is wrong.”



50



Although these KPIs are visible, they only monitor performance. They do not drive it.



51

Electronic Displays monitor and show performance results



The data tell the impact of what we are doing.
They do not tell us about our actual behavior
or how to improve it.

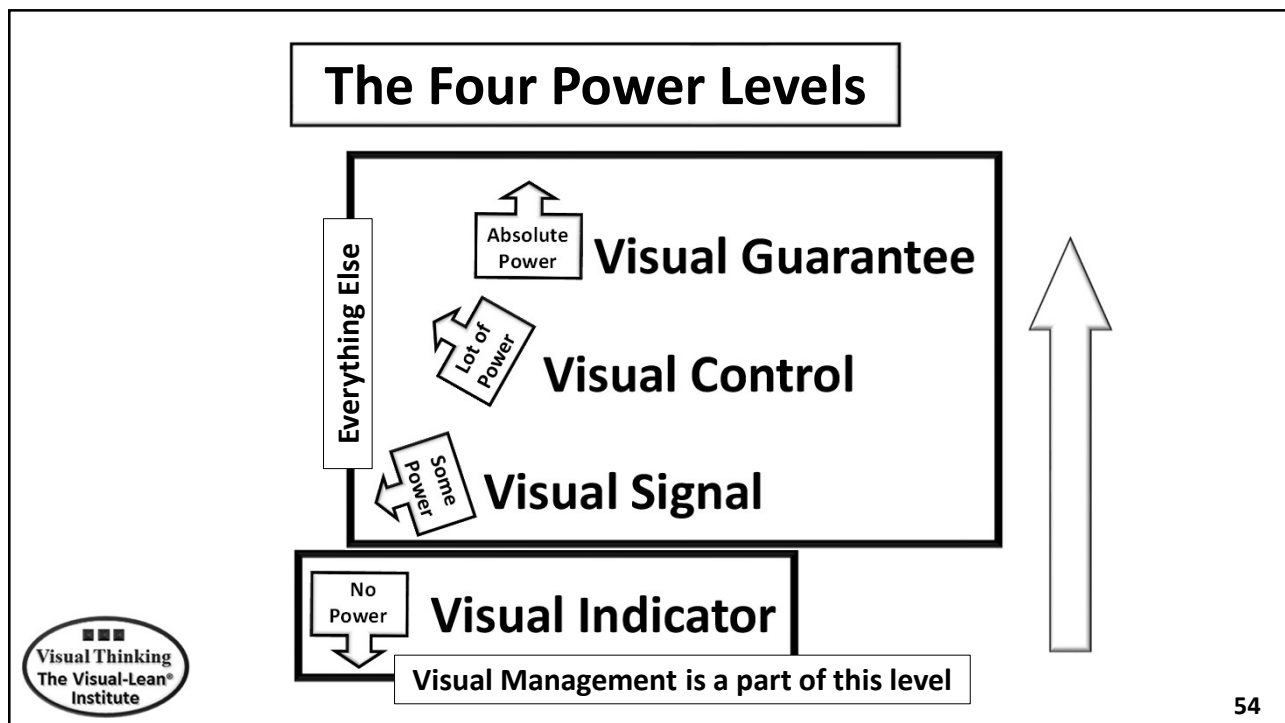
Visual management cannot
make us change our performance.




52



53






Visual Embedded-ness = Visual Performance


Tells me

This device tells me what the right behavior is



Makes me

This device embeds the right behavior and makes me do it


55


Visual Workplace Continuum: The Full Spectrum of Visual Functionality

	Start Up	Some Biz Benefit	Sizable Biz Impact	Transformed Biz
Culture \$\$\$				
	Instability/Randomness	Emerging Improvement/Stability	Embedded Performance	High Performing/Driven

Categories of Visual Function >

Operator-led Visuality	Visual Displays Visual Scheduling	Visual Standards	Visual Management	Visual Metrics & Visual Problem- Solving	Synergies of Previous
1	2	3	4	5	6
12%	8%	10%	10%	12%	4%

1 Value-Add Associates Visual Order Visual Inventiveness	2 Supervisors Engineers Managers Visual Standards	3 Supervisors Planners Managers Visual Scheduling Visual Displays	4 Executives Managers Supervisors Visual Leadership Visual Problem Solving Visual Metrics	5 Planners/Engineers Supervisors Material Handling Visual Controls Visual Pull Systems
6 Engineers Quality Techs Visual Guardians (joka-yoku)	7 Maintenance Department Visual Machine	8 Admin & Support Staff Visual Lean Office	9 Visual Macro Team Visual Macro Environment	10 The Visual Integration Process Visual Enterprise



Visual Management

vs. Visual Performance

56

Results: Financial & Cultural

5



documented KPIs and KBIs

57

Snowballing Results on the Cell Level (after 4 Months)

A

Before

- ☐ Ran out of chemicals on average of 1-3 times each shift
- ☐ 42 hours per week downtime
- ☐ 2,184 hours per year



Skyworks Solutions

After

- ☐ Eliminated all stock outs
- ☐ Increased production by 25%
- ☐ Zero hours per week downtime

Rolled-Up Across the Cell

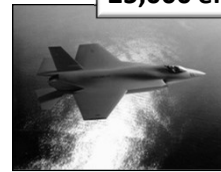
- ☐ Reduced scrap by \$2,555,000 per year
- ☐ Eliminated 7,132 hours of downtime and operator cycle time—yearly
- ☐ Reduced walking by 54%
- ☐ Eliminated all (100%) rework in plating process



58

Lockheed-Martin

Palmdale, California:
Fighter Jet Modification Station



25,000 emps

B

LM-Aero applied 1,000 hours of 6S/Visual only

Seven Months Later

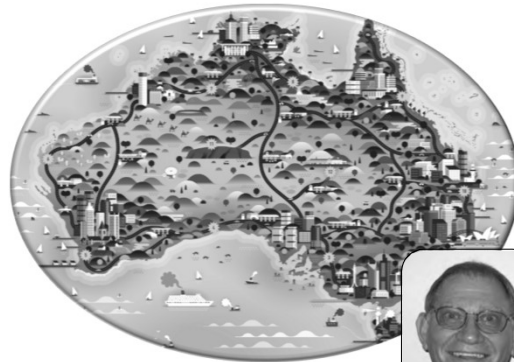
- 15% productivity increase
- 700 hours of labor reduction per unit
- Complete payback on this 1000-hour investment in 7 units

1 unit =
1 fighter jet



59

A group of 18 engineers
in Sydney, Australia
decide to get visual



Brian Levitan, Lean-Australia



C

**Their Motion Metric?
Interruptions**





↓ **Decreased interruptions
through visual devices**

↑ **Increased weekly productivity
by 34%**



60

Brandt Engineered Products








Canada

The Brandt Group of five companies
 Combined annual sales exceed
\$1 billion
 • 1200 employees

D

Low-Volume/High-Mix Production





**Visual Thinking
The Visual-Lean®
Institute**




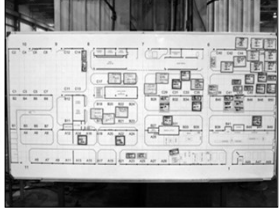

Before operator-led visibility






61

Lean is not always the method of choice, for example, in high-mix/low-volume production.

Visuality always is—with highly-implementable visual solutions that advance operator inventiveness, interdepartmental connectivity, cultural alignment, and an accelerated flow.

D

**Visual Thinking
The Visual-Lean®
Institute**

After operator-led visibility

62

Operators became experts of their own work—scientists of motion

D

What did operator-led visuality do for us?



Stewart Bellamy
Ace Visual Trainer



	Before	After
Assembly Space	>11,200 sq ft	<4,800 sq ft
Throughput	2 per week	8 per week
Production Time	250+ hrs ea (average)	124 hrs ea (average)
Yard storage	>5,000 sq ft	Virtually eliminated
Team Involvement	Good	Immeasurable



*The more the process became visual,
the more production velocity increased.*

63



Diverse: Varied, Assorted,
Different, Dissimilar, Unlike





Creative: Imaginative, Inspired,
Artistic, Resourceful, Innovative,
Original, Ingenious





Contributing: Give, Share,
Add, Participate, Engage, Have a
Say, Supply, Fund, Provide



64

	<div> <p>Gwendolyn Galsworth WhatsApp: +1-503-233-1784 Email: gwendolyn@visualworkplace.com Website: www.visualworkplace.com</p> </div> <div>  </div> <div> <p><i>Thank you</i></p> </div>	<p>65</p>
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	<table border="1"> <tr> <td> <p>WhatsApp: +1-503-233-1784 Email: contact@visualworkplace.com Website: www.visualworkplace.com</p> </td> <td> <p>Phone: +48-504-144-170 Email: info@4reults.pl Website: www. 4results.pl</p> </td> <td>  </td> </tr> </table>		<p>WhatsApp: +1-503-233-1784 Email: contact@visualworkplace.com Website: www.visualworkplace.com</p>
<p>WhatsApp: +1-503-233-1784 Email: contact@visualworkplace.com Website: www.visualworkplace.com</p>	<p>Phone: +48-504-144-170 Email: info@4reults.pl Website: www. 4results.pl</p>		

About Gwendolyn D. Galsworth

Gwendolyn D. Galsworth, PhD, is president/founder of *Visual Thinking Inc.* and *The Visual-Lean Institute®* (collectively “VTI”). Dr. Galsworth formed her company in 1991 as a consulting, training, and research firm, specializing in the technologies of the visual workplace. Since then, she has codified the field of visuality into a single coherent framework of thinking and deployment of which she is an expert. Under her leadership, VTI offers seminars, workshops, clinics, train-the-trainer, and full visual conversions in the USA and globally.

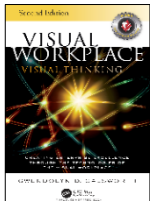
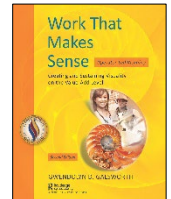


Track	Track Content/Courses
Track 1	Visual Workplace/Visual Thinking Briefing + Pre-Launch Planning
Track 2	Visual Order/Visual Inventories Implementation Suite
Track 3	Work That Makes Sense: Operator-Led Visuality
Track 4	Becoming a Leader of Improvement (LPI) Management by Sight How Role for Supervisors & Managers Visual Display/Control Boards
Track 5	Visual Machine/Implementation Suite Visual & Direction
Track 6	Becoming a Leader of Improvement (LPI) Policy Deployment + Operations Creating a Business Systems Template Road Map
Track 7	Visual-Lean® Office Implementation Suite
Track 8	Becoming a Leader of Improvement (LPI) Visual Problem-Solving Visual Metrics/Visual Results Visual Standard-Setting
Track 9	Visual Advanced Visual Standard-Setting Visual Standard/Visual Control Automating Into Defects Visual Countermeasures (Poka Yoke)

In 2005, Dr. Galsworth established the Visual-Lean® Institute where in-house trainers and external consultants are trained and licensed in nine core visual workplace courses—including Visual Machine®, Visual-Lean® Office, Visual Management, Operator-led Visuality, and Visual Leadership. As a result, they can train and implement these methods in their own companies (or with their clients) and achieve a fully-functioning, self-sufficient visual enterprise.

Dr. Galsworth’s main focus is in ensuring that her clients, large and small, accelerate their rate of visual transformation, strengthen cultural alignment, and achieve long-term, sustainable bottom-line results. Clients include: Lockheed-Martin, Hamilton Standard, Pratt & Whitney, Hitchcock Industries, Royal Nootboom Trailers/Holland, Crown Equipment/Mexico, Trailmobile/Canada, Parker Denison, Rolls-Royce/UK, TVS Sundaram Clayton/India, Crompton Greaves/India, Sears Home Services, United Electric Controls, and Wilson Transformer /Australia.

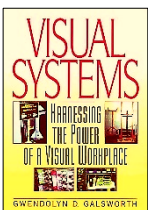
Dr. Galsworth is continually transforming her onsite discoveries into new knowledge and know-how in the form of visual workplace methods, models, and constructs in order to assist companies on their journey to operational excellence. Many of her methods are now available as online training systems, fully designed and narrated by Dr. Galsworth. Her *Work That Makes Sense Training System*, for example, is a 13-module process for operator-led visuality (in English and Spanish). Also *Mistake-Proofing for Perfect Quality*, created in collaboration with Dr. Martin Hinckley, NASA scientist and author of *Make No Mistake*.



Recognizing the fit between The Shingo Prize and workplace visuality, Robert Miller, former Shingo Prize executive director, put it this way: “*The visual workplace, as taught by Gwendolyn Galsworth, is in perfect harmony with the model of Operational Excellence represented by The Shingo Prize. The concepts, tools, and methods of visuality are essential as we pursue other guiding principles of seeking perfection, quality at the source, and the continuous flow of value to customers.*”

Dr. Galsworth is a one of eight Shingo Institute Faculty Fellows and author of seven books on workplace visuality and strategic improvement. Her ground-breaking book, *Visual Workplace-Visual Thinking*, is in its second edition, contains 200 visual solutions, and provides a complete foundation in her visual principles, practices, and her 10-Doorways model. *Work That Makes Sense: Operator-Led Visuality* (second edition) contains over 500 full-color visual solutions and provides a step-by-step process that operators follow to convert their work areas to visuality that is sustainable. Both books are winners of the prestigious Shingo Prize.

Her book on the cost of complexity, *Smart Simple Design/Reloaded*, takes a hard look at the costs and challenges of product diversification. In it, she maps out the *Variety Effectiveness Process (VEP)*, a proven method for de-complicating the organization by simplifying product architecture and dismantling layers of embedded complication that can choke a company’s infrastructure and product design process. Once VEP is effectively applied, the need for both visual and lean is significantly less urgent. Galsworth’s books are available globally from our website (visualworkplace.com) and on Amazon, in print and on Kindle.



Dr. Galsworth’s career in operational excellence began as the head of training and development at Productivity Inc. in the early 1980s. There she worked closely with Dr. Ryuji Fukuda to adapt the CEDAC® method for western audiences—and with Dr. Shigeo Shingo to develop, among many things, *poka-yoke* as an implementation methodology for the West. While there, she was also principal developer and implementer of *Visual Factory*, *TEIAN* (operator-led suggestion systems), and *Hoshin Kanri/X-Type Matrix Planning* (policy deployment). She served as a Malcolm Baldrige and Shingo Prize Examiner for many years and a Senior Fellow at the Center for Competitive Change in the University of Dayton’s Business School for a decade.

Galsworth holds a Ph.D. from Indiana University and has led executive study missions to some of the world’s finest companies, including in Japan. She is a frequent keynote speaker. Five years of podcasts from her radio show, *Visual Workplace Radio*, can be found on her website, along with over 100 articles from *The Visual Thinker Newsletter* and more than 25 videos.

Dr. Galsworth recently moved to Europe to establish *Visual Thinking-Europe* in partnership with *4Results*, a well-known training and consulting firm in Warsaw. She can be reached through contact@visualworkplace.com. See Wikipedia for more. □