Practical Techniques for Successfully Communicating Technical Topics

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Think.

Feel.

Act.

...when data alone is not enough.
Bayeux Tapestry

Infotuition. ...when data alone is not enough.
Bayeux Tapestry
Audience perspective matters
Practical Techniques
For Successfully Communicating
Technical Topics

Audience
Content
Materials
Delivery

Infotuition. ...when data alone is not enough.
Practical Techniques
For Successfully Communicating Technical Topics

Audience
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For Successfully Communicating Technical Topics

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Infotuition...when data alone is not enough.
Practical Techniques
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Audience
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Infotuition. ...when data alone is not enough.
Our Audience

How many people are watching this webinar from your computer?

- One person (yourself)
- 2 to 4 people
- 5 to 7 people
- 8 to 10 people
- More than 10 people
Audience

WIIFM

Infotuition. ...when data alone is not enough.
Audience

What’s In It For Me
Motivation

Extrinsic

Intrinsic

Infotuition...when data alone is not enough.
Infotuition. ...when data alone is not enough.
Motivation

Extrinsic

Intrinsic

...when data alone is not enough.

Infotuition. ...when data alone is not enough.

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Audience

We have a lot of material to cover

We’re here to meet your needs

What’s In It For Me

Infotuition. ...when data alone is not enough.
Audience

“So that you can…”
“For you this means…”

We’re here to meet your needs

What’s In It For Me

Infotuition. ...when data alone is not enough.
What's the one thing they need to remember?
Your Audience

How clear are you on the **one thing you** want your audience to remember?

- Crystal clear
- Somewhat clear
- Need to think about it
- Too many key points to decide
- Not clear at all

Infotuition. ...when data alone is not enough.
Practical Techniques
For Successfully Communicating Technical Topics

Infotuition...when data alone is not enough.
Untangle Your Content
Untangle Your Content

Opening

Main Message

Key Points

Closing

Infotuition. ...when data alone is not enough.

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Content

Organized information

Infotuition. ...when data alone is not enough.

www.shelleyrow.com
Content

Organized information

Infotuition. ...when data alone is not enough.
Untangle Your Content

Opening

Infotuition. ...when data alone is not enough.
Your Opening

Reference Results
Unusual Fact
Story
Example

….WIIFM

In short: ...when data alone is not enough.
Imagine…
We have a problem.
If I were to ask you…
Would it interest you to know…
It never ceases to amaze me…
The year is…
What type of opening can you use in your next presentation?

- Unusual fact
- Example
- Story
- Reference results
- Other

Infotuition. ...when data alone is not enough.
Untangle Your Content

Opening

Main Message

Infotuition. ...when data alone is not enough.
What’s the **one thing** they need to remember?

“So that you can…”

“For you this means…”
Untangle Your Content

Opening

Main Message

Key Points

Infotuition...when data alone is not enough.
Untangle Your Content

3-5 Key Points

Communicate for their understanding

Infotuition. ...when data alone is not enough.
Untangle Your Content

3-5 Key Points

Communicate for their understanding

Fact
Example
Image
Analysis, data, graphs
Story
...about people
...it's personal

Infotuition...when data alone is not enough.
Content

Wired for

Infotuition. ...when data alone is not enough.
Content

Wired for story

Infotuition. ...when data alone is not enough.
Untangle Your Content

Opening

Main Message

Key Points

Closing

Infotuition... when data alone is not enough.
Your Closing

Reference Results
Unusual Fact
Story
Example

Their one thing - WIIFM

Info tuition: ...when data alone is not enough.
Practical Techniques
For Successfully Communicating Technical Topics

Audience
Content
Materials
Delivery

Infotuition...when data alone is not enough.
Infotuition. ...when data alone is not enough.
**Materials**

- Limited info
- Impactful
- Visual clues

*Infotuition*...when data alone is not enough.
Materials

Language Center

Infotuition. ...when data alone is not enough.
Materials

Language Center

Infotuition. ...when data alone is not enough.
Materials

Language & Visual Center

Infotuition. ...when data alone is not enough.
Infotuition. ...when data alone is not enough.
Infotuition...when data alone is not enough.
Infotuition: ...when data alone is not enough.
Infotuition...when data alone is not enough.
Organize Your Content

- Opening
- Main Message
- Key Point
  - Image, graph, story
- Key Point
  - Example, analogy, chart
- Key Point
  - Fact, image, story
- Closing Main Message
Organize Your Content

• Opening
• Main Message
• Key Point
  Image, graph, story
• Key Point
  Example, analogy, chart
• Key Point
  Fact, image, story
• Closing Main Message

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Untangle Your Content

Opening

Main Message

Key Points

Closing

Infotuition. ...when data alone is not enough.
Conflict Management
Conflict Resolution Process

Seek first to understand

Empathize with feelings

Find the source of disagreement

Find common ground

Brainstorm alternatives
Transformation of Transportation

Transform

- Mobile Platforms
- Ecommerce
- Vehicles
- Data
- Customer
- Multi-modal
STC Research

Research Program Components

- Major Research Initiatives (MRIs)
- Opportunity/Exploratory (O/E) Grants

Research Program Director:
Reg Souleyrette, University of Kentucky
STC Research

Major Research Initiatives

Opportunity/Exploratory Grants

Research Program Director:
Reg Souleyrette, University of Kentucky
### Major Research Initiatives (MRIs)

<table>
<thead>
<tr>
<th>Short Project Title</th>
<th>*Funding</th>
<th>Core Team</th>
</tr>
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<tbody>
<tr>
<td><strong>Crash Modification Factors &amp; the HSM</strong></td>
<td>$450,000</td>
<td>HSRC/UA/UT/UK</td>
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<td>Coordinator: Reg Souleyrette (UK)</td>
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<td><strong>Integrated Simulation &amp; Safety</strong></td>
<td>$750,000</td>
<td>UK/UCF/UT</td>
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<td>Coordinators: Essam Radwan (UCF) Shashi Nambisan (UT)</td>
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<tr>
<td><strong>Explore S-D Characteristics/Culture</strong></td>
<td>$450,000</td>
<td>USF/UT/UA</td>
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<tr>
<td>Coordinators: Steve Polzin (USF) Nick Stamatiadis (UK)</td>
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*Year 1 combined Federal & Match Funding*

| **Big Data for Safety**                                   | $700,000  | UT/UK/UCF          |
| Coordinator: Asad Khattak (UT)                           |           |                    |
## Major Research Initiatives (MRIs)

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## Highlighting Transportation Careers

### How to improve visibility before education and career choices are made?

- Host targeted events for K-12 audience
- Include more social media approaches
- Demonstrate benefits of latest technology.
- Have past interns promote their experience
- Sponsor engineering competitions

### What are the positives of industry and how are they (should be) promoted?

- Greatest positives: **job security**, benefits, job diversity, advancement opportunities and travel opportunities
- Highlight technologies and eco-friendliness
- **Transferability** of skills
- **Job challenges** and problem solving
- **Satisfaction** from completing projects and affecting economy

### What can the industry do to compete for talented students with Google, airlines, automotive manufacturers, international design-build firms etc.?

- Strengthen connection between classroom study and career activities ASAP
- Actively promote “industry positives”
- Use sponsorship approaches of other industries (e.g., sports)
- Promote internship opportunities before hire
- Approach candidates with honesty
- Have competitive salaries
- Responsive and timely recruitment process
Highlighting Transportation Careers

*Improve visibility* before choices are made

- K-12 targeted events
- Social media
- Technology
- Intern experiences
- Engineering competition
Highlighting Transportation Careers

**Improve visibility** before choices are made

- K-12 targeted events
- Social media
- Technology
- Intern experiences
- Engineering competition

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This Congressionally-mandated study by the National Academies reviewed how the Department of Homeland Security (DHS) is building its capabilities in risk analysis to inform decision-making. More specifically, the study addressed the following tasks:

a) Evaluate the quality of the current DHS approach to estimating risk and applying those estimates in its many management, planning, and resource-allocation (including grant-making) activities, through review of a committee-selected sample of models and methods;

b) Assess the capability of DHS risk analysis methods to appropriately represent and analyze risks from across the Department’s spectrum of activities and responsibilities, including both terrorist threats and natural disasters;

c) Assess the capability of DHS risk analysis methods to support DHS decision-making;

d) Review the feasibility of creating integrated risk analyses covering the entire DHS program areas, including both terrorist threats and natural disasters, and make recommendations for best practices, including outreach and communications;

e) Recommend how DHS can improve its risk analyses and how those analyses can be validated and provide improved decision support.
**DHS Approach to Risk Analysis (2010)**

- **Evaluate**
  - Estimate quality
  - Estimate risk
  - Apply estimates

- **Analyze**
  - Risk analysis capability
  - Represent risk
  - Across departments

- **Support**
  - Risk analysis capability
  - Support decision-making

- **Feasibility**
  - Integrated risk analysis
  - Threats & disasters
  - Best practices

- **Recommend**
  - Improve risk analyses
  - Validate & improve decision support

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Materials

- Demonstration
- Data/analysis
- Chart/graph
- Image
- Story
- Analogy
- Memorable phrase

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Materials

Moving 14 billion tons of freight

Use a Hook
Materials

Moving a good sized mountain of freight

Use a Hook

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Moving a good sized mountain of freight
Focal Point
Growth in Vehicle Probe Data

April 2009

15 minute snapshot of incoming GPS data (fleets, cars, phones, apps, etc.) – Source INRIX®

January 2012

Courtesy: INRIX®
Vehicle Probe Data Grows by xx%

April 2009

January 2012

- 15 minute snapshot of incoming GPS data (fleets, cars, phones, apps, etc.) – Source INRIX®

Courtesy: INRIX®
US Navigation Sales 1996 to 2011

Smartphones dominate the market for navigation

- **Smartphones with navigation**
- **Dedicated portable navigation devices**
- **Factory fitted in-car systems**

Courtesy: Nokia
April has shoulder or one-lane closure 33% of the time.
NTCIP 1209 Detection Architecture

Management Station

Traffic Controllers

Loop Detectors

Video

Other Technologies
- Radar
- Magnetometer
- Acoustic, etc.

NTCIP TSS Communications

Graphics: Ralph W. Boaz
Identification of R&D Gaps & Needs

1. TRB Committee on Critical Transportation Infrastructure Protection shares research results from all sources & identifies research needs
   - TRB Annual State Visits to DOTs, Universities, MPOs, Transit Agencies, Ports, Airports & other agency reps
   - 50+ other technical meetings

2. AASHTO Special Committee on Transportation Security & Emergency Management (SCOTSEM) identifies and refers research needs
   - State/Local Government
   - Non-Government Organizations
   - Federal Agencies
   - Private Sector
R&D Gaps & Needs

TRB Committee on Critical Transportation Infrastructure Protection:

Results

TRB Annual State Visits to DOTs, Universities, MPOs, Transit Agencies, Ports, Airports & other agency reps

50+ technical meetings

Needs

State/Local Government

Non-Government Organizations

Federal Agencies

Private Sector

AASHTO Special Committee on Transportation Security & Emergency Management (SCOTSEm):

Identifies & refers Needs
R&D Gaps & Needs

TRB Committee on Critical Transportation Infrastructure Protection:

AASHTO Special Committee on Transportation Security & Emergency Management (SCOTSEMS):

Identifies & refers Needs

Technical meetings → TRB visits → Government

Government → NGOs → Private

Results Needs

Government

NGOs
Continuous Development of Risk Management and Emergency Response Planning Guidance

2002: Guides to Vulnerability Assessment & Emergency Response Planning
2002-2003: workshops
2004-2005: publications that anticipated NIMS, NRP/NRF, and NIPP.
2012: publications adopted by AASHTO

Published 2009:
NCHRP Report 525, Vol. 14
Security 101: A Physical Security Primer for Transportation Agencies

Published 2010:
NCHRP Report 525, Vol. 16
A Guide to Emergency Response Planning at State Transportation Agencies
Continuous Development of Risk Management and Emergency Response Planning Guidance

A Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection

Prepared for
The American Association of State Highway and Transportation Officials’ Security Task Force
As National Cooperative Highway Research Program Project 20-07/Task 151

Prepared by
Science Applications International Corporation (SAIC)
Transportation Policy and Analysis Center
7985 Science Applications Court
Vienna, VA 22182

May 2002

A Guide to Updating Highway Emergency Response Plans for Terrorist Incidents

Prepared for
Association of State Highway and Transportation Officials’ Security Task Force
As National Cooperative Highway Research Program Project 20-07/Task 151A

Prepared By
Parsons Brinckerhoff – PB Paramadyne
3300 Tower Oaks Boulevard
Rockville, MD 20852

May 2002
Continuous Development of Risk Management and Emergency Response Planning Guidance

**2002-2003**: Workshops

**2004-2005**: Publications that anticipated NIMS, NRP/NRF, and NIPP.

**2009**: Security 101: A Physical Security Primer for Transportation Agencies

**2010**: A Guide to Emergency Response Planning at State Transportation Agencies

**2012**: Publications adopted by AASHTO
I-96/Latson Road Interchange
I-96/Latson Road Interchange

Your Analysis Conclusion
WHAT ARE TRAFFIC ANALYSIS ZONES (TAZS)?

• Small geographic subdivisions of the study area
  • Built from adjacent census blocks that have similar land use

• Groups similar Socio-Economic characteristics (such as number of households, population, number of employees, etc.)
  • Attributes reviewed, modified, and approved by TC-TALUS Committee’s

• Serves as the “Origin” and “Destination” points for the modeled traffic
  • Summarizes roads removed from the model
WHAT ARE TRAFFIC ANALYSIS ZONES?

Geographic Subdivisions
• Adjacent census blocks
• Similar land use

Similar socio-economics
• Households, population, etc.
• Approved by TC-TALUS

Origin – Destination points
Materials

Handouts
Materials

- Not PPT slides!
- Fill-in-the-blank
- More content
- Clarify main points
- References, URLs

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Practical Techniques
For Successfully Communicating Technical Topics

Audience
Content
Materials
Delivery

Infotuition...when data alone is not enough.
Delivery

It’s not a Presentation
It’s Communication!

Infotuition. ...when data alone is not enough.
Delivery

• Never, **EVER**
  in the ...
Delivery

It’s not a Presentation
It’s Communication!

• **Eye contact**
Delivery

• Eye contact
• **Voice**

It’s not a Presentation
It’s Communication!

*Infotuition* ...when data alone is not enough.
Delivery

• Eye contact
• **Voice**
  - Inflection
  - Pace
  - Volume
  - Power of the…
  - Smile

It’s not a Presentation
It’s Communication!

*Infotuition*...when data alone is not enough.
Delivery

It’s not a Presentation
It’s Communication!

• Eye contact
• Voice
  ➢ Inflection
  ➢ Pace
  ➢ Volume
• **Gestures**

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Don’t Leave Anything to Chance

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Practice!

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Don’t Leave Anything to Chance

- **Time** it (with the slides)
- Easy-to-read **notes** (not prose)
- Arrive **early**
- **Test** all the equipment
- **Test videos** in advance
- Dress **comfortably**
- Talk with the **audience** before ...and after
Your Next Presentation

Which tip will make the biggest difference in your next presentation?

- New opening
- Untangled content and one main message
- Enhanced visual materials
- Separate handout
- Improved delivery

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Infotuition. ...when data alone is not enough.
Their perspective matters

Infotuition. ...when data alone is not enough.

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Insightful Decision-Making in an Over-Thinking World

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Handout Supplement
shelley@shelleyrow.com

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