

The Wisdom of Crowds in the Front End

A market-based method
to answer high-stakes, high-risk questions
in pursuing new products

A keynote talk describing
Yazaki North America's use
of the Inovo Concept Auction™
decision support tool
to exploit the Wisdom of Crowds

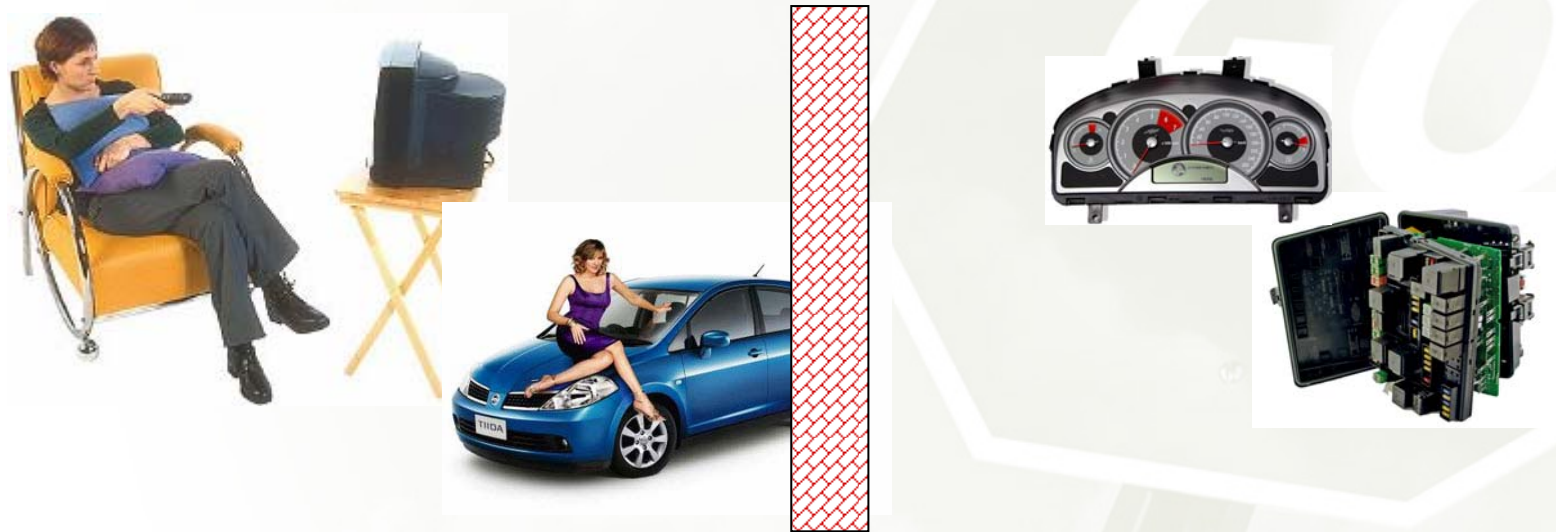


Innovation in the Auto Industry



The Automotive Ecosystem

- OEMs use their research to dictate requirements to suppliers
- The decisions of the OEMs today echo for years to come due to lengthy product cycles



New Dynamics in the Auto Ecosystem

- The move to open systems and platforms
 - OEMs require sharing of products and technologies among competitors
 - How can a company differentiate when all must build from the same 'tool set'?
- Other Increasing Pressures
 - Shrinking headcount
 - Less staff time
 - Vanishing R&D funds
 - Massive, cost competition from the developing world



Innovation in the Automotive Industry

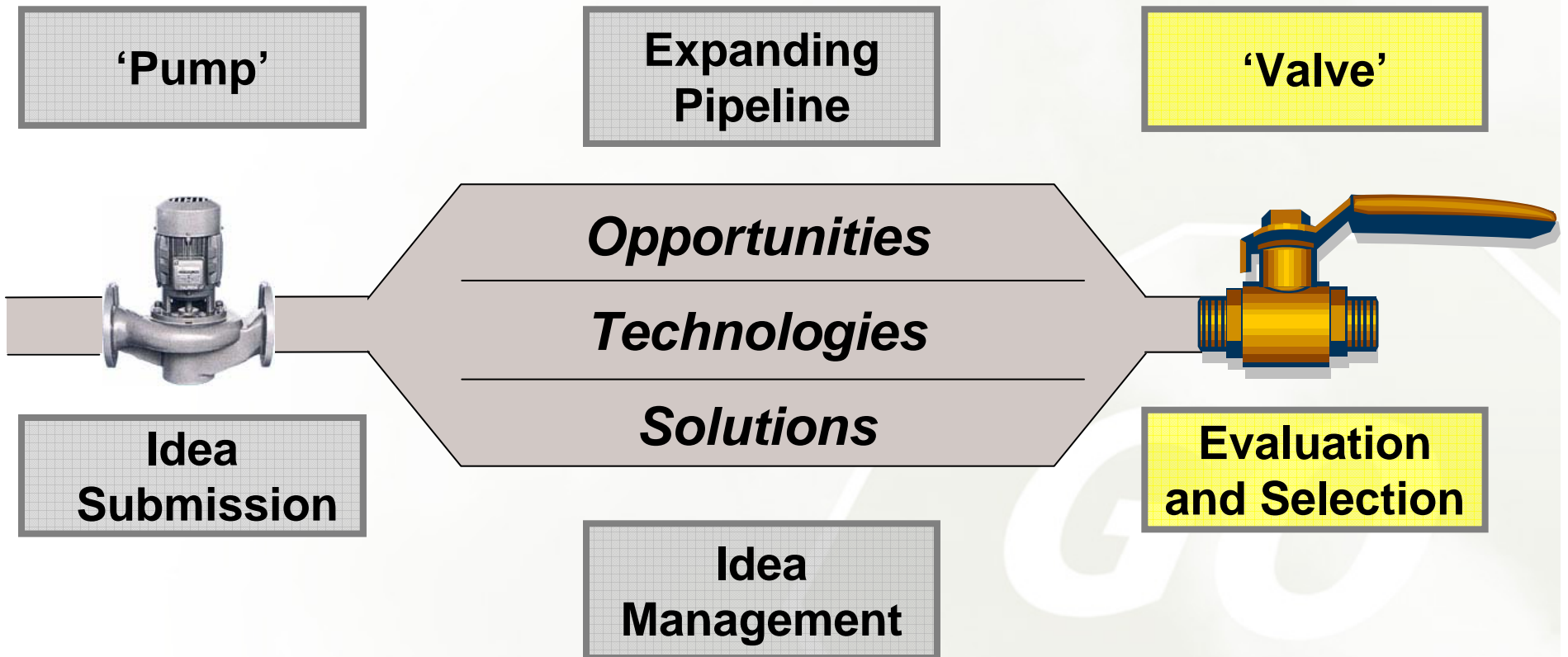
- The same as in any tough industry
 - ↑ When you win, you win big
 - Larger volumes per opportunity
 - ↓ When you lose you're locked out for years
 - Due to Common Global Platforms
- The front end is ruled by knowledge
 - Bid commitments are made early on in a knowledge-lean environment
 - The one with the best knowledge wins

The Yazaki Story

- Created a stage-gate Project Management Process
- Created a front-end process to feed that pipeline
- New problems!
 - How to assess all the ideas coming in?
 - How to chose among all the alternatives?



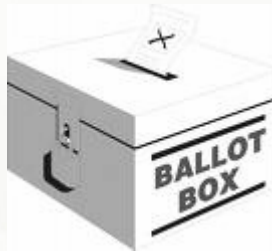
The Problem of the Idea Pipeline



Different 'Valves'

Common Solutions

- From the 'Gut'
- Voting
- Group Meeting
- Executive Decision
- Loudest Voice
- Most Detailed Solution
- Follow Deal Flow
- Est. Total Available Market
- Make Business Case



Ideal Solution

- **Accurate**
Let the best information dominate when minimal knowledge available
- **Thorough**
Tap all available knowledge in the organization
- **Fast**
Be practical for routine use
- **Buy-In**
Be practical for routine use

Markets and Auctions

GO



Why Use Market Mechanisms?

- **Consolidate** knowledge
 - Enables the broader organization (and beyond) to contribute their knowledge efficiently
 - Access ‘tacit’ knowledge (gut feel, blink response)
- **Create clarity** among fuzzy alternatives
 - Use the ‘**Wisdom of Crowds**’ effect – the market knows more than any one individual
 - See what the ‘smart money’ does
 - Reveal what the organization ‘doesn’t know’
- **Reveal** organizational thinking
 - See hidden *consensus* and *dissent*
 - Find the individuals with predictive insight
 - Uncover the portfolio that fits with ‘everything else’

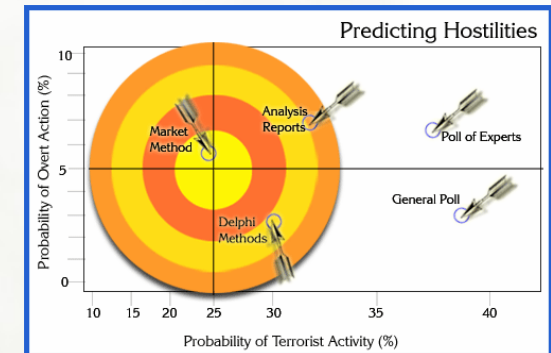
Requirements for Market-based Success

- **Diversity**
 - Each person should have private information, even if it is an eccentric interpretation
- **Independence**
 - People's opinions are not overly influenced by the opinions of those around them
- **Decentralization**
 - People are able to specialize and draw on local knowledge
- **Aggregation**
 - Some mechanism exists for turning private judgments into a collective decision

**Market judgment is much faster, more reliable,
and less subject to political forces**

Market Examples

- **Iowa Electronic Markets**
 - Accurately predicts election results
 - Federal Reserve Monetary Policy
- **DARPA's Policy Analysis Market**
 - Proposed to predict political events in the Middle East
- **Prediction Market Examples**
 - NewsFutures
 - Hedge Street
 - Hollywood Stock Exchange
- **Difficulties**
 - Requires continuously engaged participants
 - Resource intensive
 - Liquidity issues distort results
 - Difficult to identify sources of knowledge



How do you get these results on a *smaller, faster, and less involved* scale with fewer resources?

The Auction Alternative

What it is...

- An auction of a number of items (opportunities)
- A blind auction (bids are hidden)
- An investment with limited funds (e.g., \$10M)
- A way to use ‘money’ as a metric for value and consensus

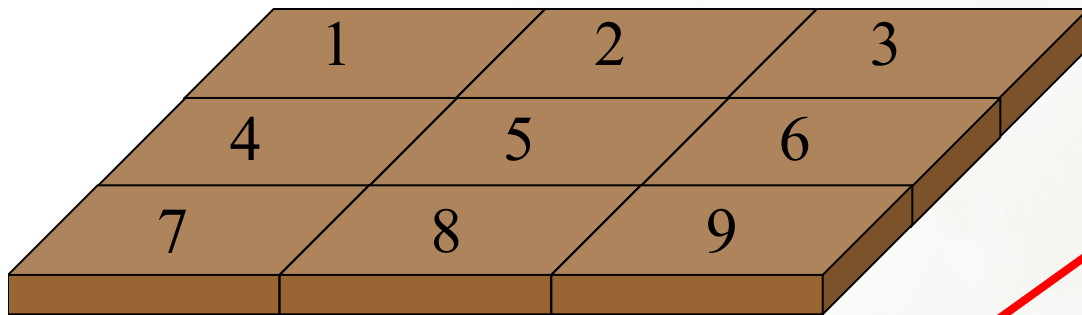
What it does...

- Evaluates concepts, ideas, opportunities or virtually any comparable set of entities. Find...
 - Perceived value
 - Relative rank
 - Consensus and divergence
 - etc.
- Forces investors to think about...
 - reward and risk
 - what other are thinking

An Example Auction



Auction Example

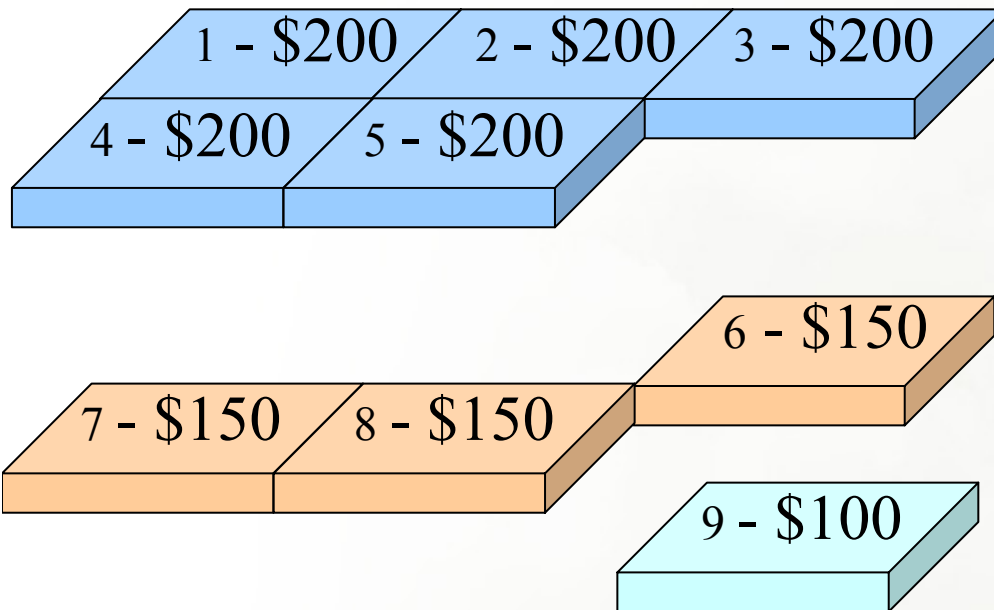


How Much

How Valuable

- Consider a land auction, divided into 9 parcels
 - Alan bids for:
 - 5 parcels at \$200 each
 - Beth bids for:
 - 3 parcels at \$150 each
 - Carl bids for:
 - 4 parcels at \$100 each
 - Donna bids for:
 - 6 parcels at \$99 each
- 18 parcels are desired
- But only 9 are available!

Auction Example – Valuing the Asset



- Alan got all 5 @ \$200 / parcel (pays \$1,000 total)
- Beth got all 3 @ \$150 / parcel (pays \$450 total)
- Carl got only 1 @ \$100 / parcel (pays \$100 total)
- Donna got no parcels - bid too low!
- Sale raises a total of **\$1,550** – That's now the market value of the land!
- Market value is \$172 / parcel
 - Alan lost \$139 (-14%)
 - Beth made \$67 (+15%)
 - Carl made \$72 (+72%)

The YNA Auction

GO



Objectives of Yazaki Auctions

- **Goals**
 - Prioritize and filter the idea pipeline
 - Learn what the organization values most
 - Learn what will and will not receive support
 - Manage the expected influx of ideas
- **Plan & Schedule**
 - Use auctions every quarter to focus attention

What's in the Idea Pipeline...And up for Bid

Innovation Concept Opportunity

Auction Information Sheet

1 - In-vehicle Data Storage Infrastructure (DSI)

An in-vehicle data-storage subsystem that is replaceable and upgradeable

The opportunity lies in laying claim to the data backbone - just as Yazaki owns the power backbone today.

Concept Description:



Today the hard drive is optional equipment in the vehicle, but tomorrow it will be standard – a must have, even more so than features like vehicle navigation or multiple lighter/power outlets. Just as a car's battery must connect to vehicle components, so must the hard drive. The Data Storage Infrastructure (DSI) system is the mass-storage backbone in the vehicle. It includes data, device power, and hard and soft interfaces. It allows the vehicle data storage to connect to consumer devices as well as operational data devices such as the 'black-box' and telemetry data to be recorded.

In different embodiments, it can connect to multiple small memory devices over cabled or wireless interfaces. It also allows replacing the mass-storage unit with disk or flash alternatives of different sizes and price points by the OEM, the aftermarket, or the DIY car owner.

Persona Quotes:



"Car is like Home" Says:





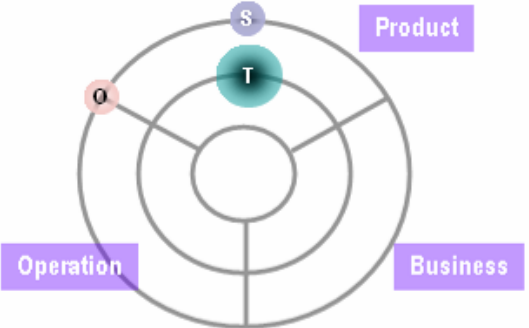
"Wiring my iPod up for every trip was crazy. Now I can sync my car with my computer when I pull into the garage. When the 10GB drive becomes too small in a year, I'll just replace it on my own with a 40GB drive – probably for the same price!"

Investor Comments:

One of 10 Concepts

Information for Each Concept











- **Business Concept**
 - What is the business idea?
- **Business Relevance**
 - Why is it right for Yazaki?
- **Technology Description**
 - What is the technology behind the concept?
 - **Technology Effects**
 - What does that accomplish?
- **Opportunity**
 - What are people are looking for?
 - **Opportunity Wants**
 - Specific outcomes & experiences to fulfill
- **Solutions**
 - What specific solutions are possible?
- **Comments**
 - Extra input from the bidders
- **Knowledge Sphere**
 - How much is known about the concept?

Innovation Market Opportunity	
 1. Concept A	
This is a general description of the market opportunity	
Business Concept This is a more in-depth talking	Business Relevance Discussion about how this
Technology 	Opportunity 
Technology Effects	Opportunity Wants
Solutions 	Knowledge Sphere 
Your Own Comments	

Tapping The Yazaki Crowd

- Identified various groups within Yazaki
 - Marketing, Engineering, Advanced Planning
 - North America, Japan, Europe
- Employees invited to participate in the auction via email
 - Provide their opinions on which products should be moved ahead in Yazaki's development
- Emailed Excel Workbook with concept descriptions and bidding sheets

Concepts at Auction – Valuation - Reward

Portfolio Valuation	
<p>How much do you believe each idea is worth to Yazaki? Make your entries in the yellow-shaded region below. Collectively, the ideas are worth \$100M to Yazaki. You must decide how much each is worth individually. The total must be \$100M. This is the 'reward' part of the risk-reward calculation.</p>	
Item	Valuation
1 -  1 - <i>[blurred text]</i>	M
2 -  2 - <i>[blurred text]</i>	M
3 -  3 - <i>[blurred text]</i>	M
4 -  4 - <i>[blurred text]</i>	M
5 -  5 - <i>[blurred text]</i>	M
6 -  6 - <i>[blurred text]</i>	M
7 -  7 - <i>[blurred text]</i>	M
8 -  8 - <i>[blurred text]</i>	M
9 -  9 - <i>[blurred text]</i>	M
10 -  10 - <i>[blurred text]</i>	M
Total	\$0.0 M
Status	Please Allocate More

Return to the Instructions

Browse the Analyst Reports

Go To Resource Allocation

Submit Investments

Allocation – Risk

Portfolio Allocation		
<p>How do you want to allocate your portfolios?</p> <p>Choose which percentage of your short-term and long-term portfolio you want to invest in each idea. You must allocate a total of 100% for each portfolio, both short and long-term. If you want to invest 0% in a concept, you can leave it blank.</p> <p>This is the 'risk' consideration in the risk-reward calculation.</p>		
Item	Resource Allocation	Concept Valued?
1 -		
2 -		
3 -		
4 -		
5 -		
6 -		
7 -		
8 -		
9 -		
10 -		
Total	0%	
Status	Allocate More	

Return to the Instructions

Go to Valuation

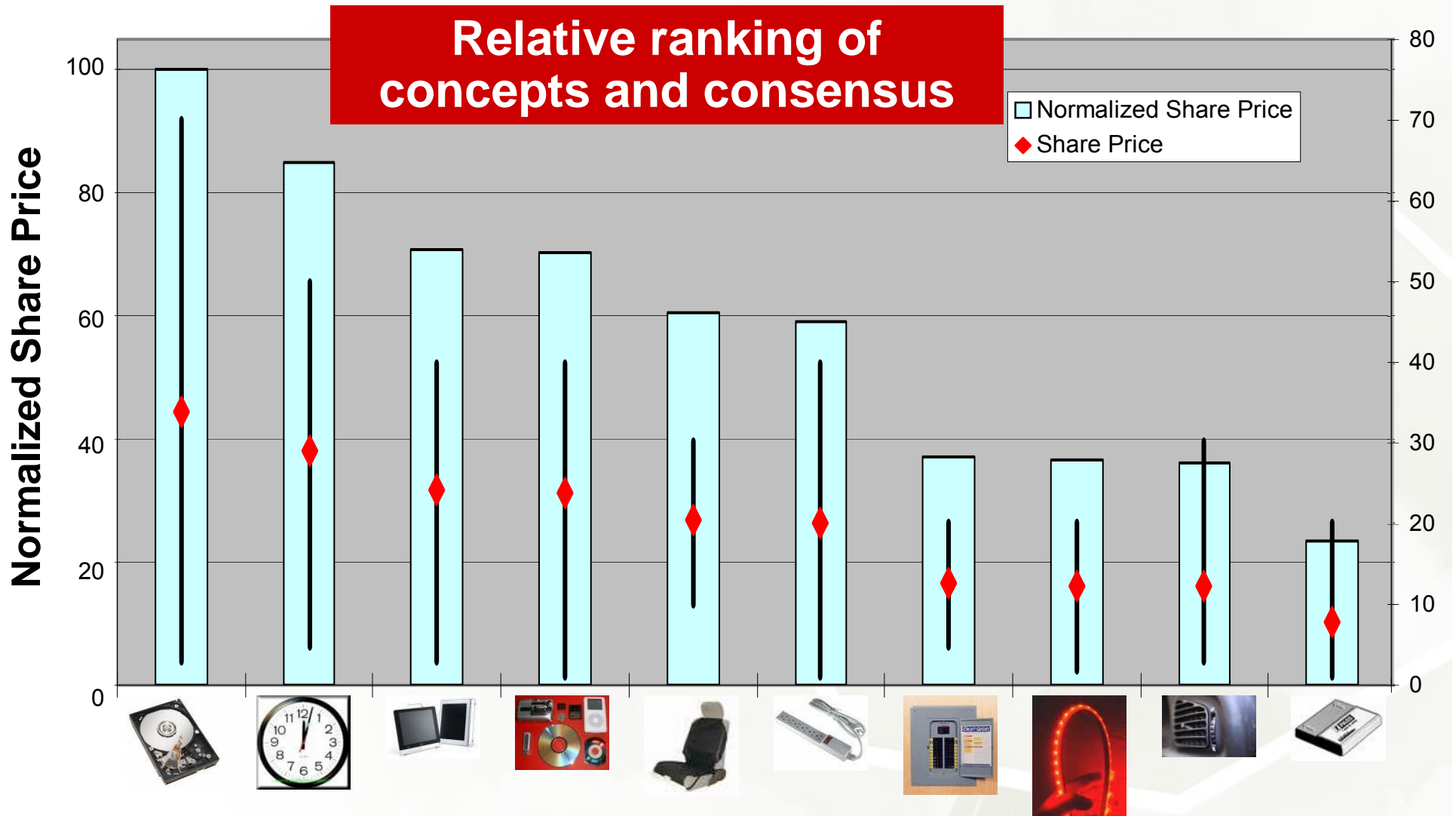
Browse the Analyst Reports

Submit Investments

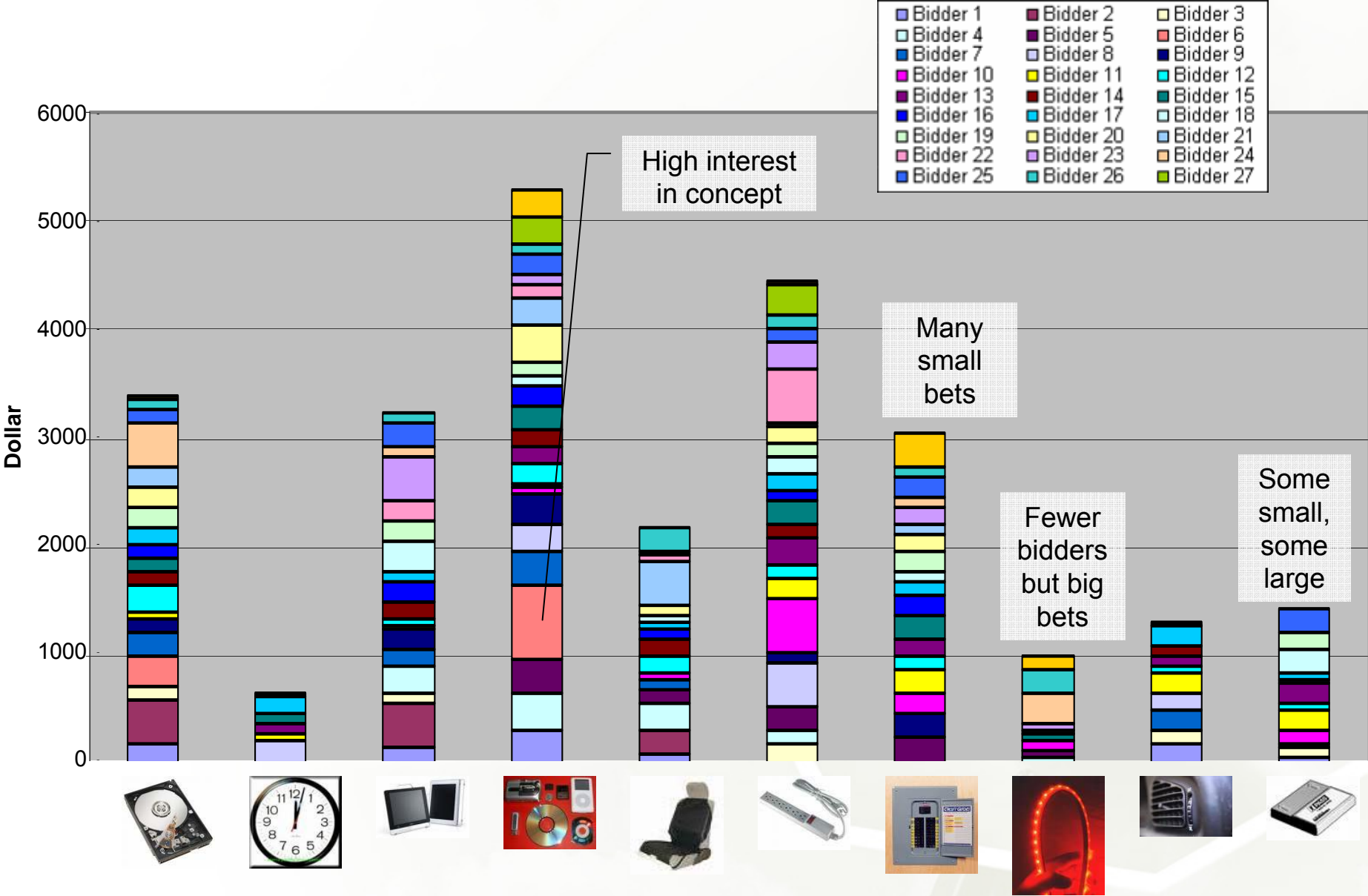
What Yazaki Learned



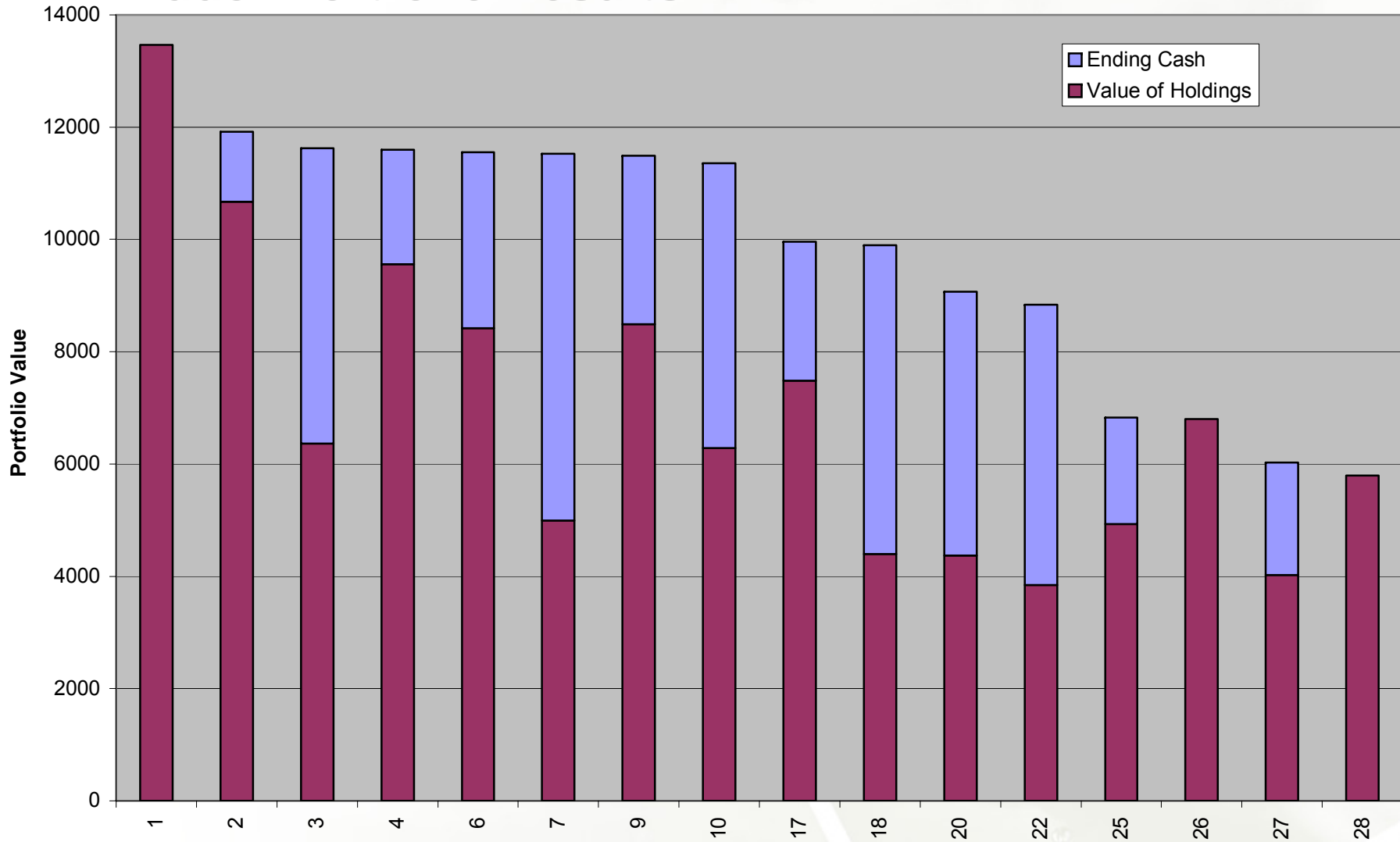
Results of Auction



Bidder Interest



Bidder Portfolio Results



Who is the best bidder? Provides an element of competition and brings out the best thinking

Results & Actions

1. Auction Results

- Created prioritization of various concepts for development
- Confirmed most of prior intuitions
- Elevated some concepts above others
- Identified strong supporters of particular ideas

2. The auction process is quick and routine

- Usable as an in-line prioritizing and insight tool
- Move concepts from idea pipeline straight into Concept Auction

3. As tool progresses in development

- Web based in lieu of Excel
- Analyze results based on groups

4. The Concept Auction Tool is being implemented by Yazaki for regular use

- As an aid in evaluating concepts

Project Insights

- **Broad interest in all concepts**
Twenty-eight people participated in the auction and most concepts had between 16-21 bidders. No concept had less than 5 bidders.
- **Prioritization did not hinge on the voices of a few**
Sensitivity analysis showed that priorities were set by the market, not on the bids of any one individual.
- **Identified unexpected sources of knowledge**
Discovered groups in the company that had deep insight in areas adjacent to their division.

Conclusion



Why Auctions Are Valued

- Evaluate concepts, ideas, and opportunities
 - Perceived value
 - Relative rank
- Consolidate diverse knowledge about new business opportunities
 - Illuminate thinking across the organization
 - Determine advocates and opponents in the organization
- Evaluate large numbers of concepts
 - Provide transparency to idea vetting
- Create clarity among alternatives



Questions?



Providers of the Concept Auction

- The Concept Auction™ is a Decision Support Tool created by Inovo Technologies, Inc.
- Part of an overall suite of tools and processes to:
 - Uncover consumer insights
 - Develop new product and services concepts
 - Evaluate ideas
- To learn more, visit

CONCEPT AUCTION™.COM
A Decision Support Tool

THE WISDOM OF MANY IS GREATER THAN THE OPINIONS OF A FEW