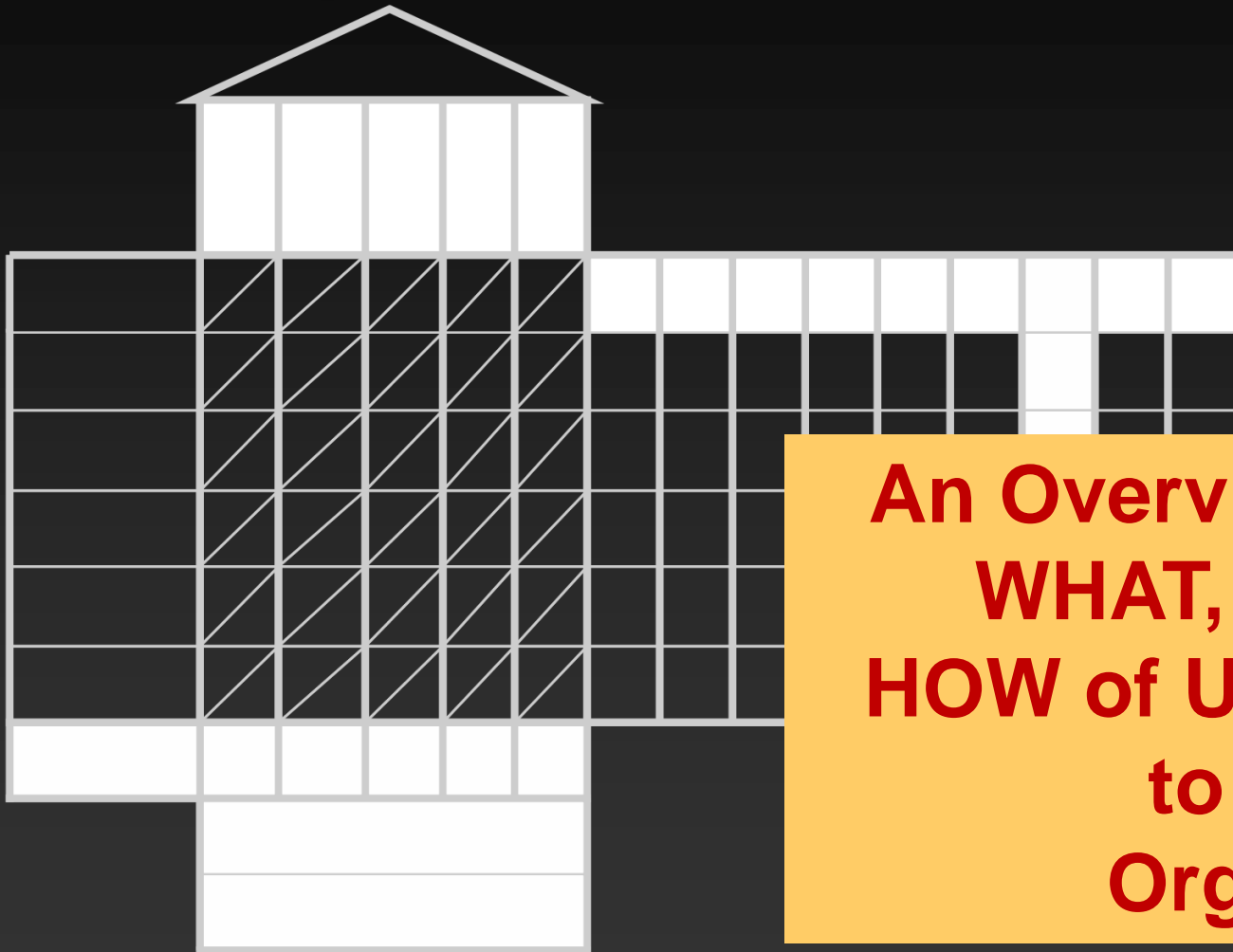


Quality Function Deployment



**An Overview of the
WHAT, WHY and
HOW of Using QFD
to Focus an
Organization**

For This Workshop, **You** Are The Customer

What are your expectations?

Have you heard of, personally used, facilitated or taught Quality Function Deployment?

How About This For A Goal?

TO: Explore the ways Quality Function Deployment (QFD) can help organizations **improve focus on their Customers.**

FOR: You, your teams and the Customers you serve

BY:

- Providing the WHAT, WHY and HOW QFD is used in an organization
- Seeing an example in use
- Q&A addressing your areas of interest

SO THAT: Your organizations can be more successful in identifying Customer-focused improvements

A Focus on Customers

Most organizations claim a focus on their Customers...

Some reach out and get their “Voice” ...

“The customer is the most important part of the production line. Without someone to purchase our product, we might as well shut down the whole plant.”

W Edwards Deming

How many effectively use the Voice to find and improve the most important processes and capabilities of their organization?

High performing organizations use a deep understanding of Customer values* to drive all decision making

- Organization improvement plans
- Improvement projects and events
- Daily interactions with Customers
- Identifying products, services and features to add

*Values - an experience a customer seeks to have or avoid

Two Categories of Values

- What do Customers care about in the offering?
 - Products: Physical or intellectual objects
 - Function, Form, Fit, Finish
 - Services: What they alter or create and how it is done
 - Activities, Setting, Provider
- What do Customers care about in the buying-benefitting experience?
 - How are the features of your offering experienced by the Customer (I.e., access, acquire, prepare to use, and use)?
 - The “drive by” flu clinic; 4 hr ER wait times

WHAT IS QFD?

Quality Functional Deployment

A technique for focusing teams:

1. Finding the most important customer voices/requirements to address
2. Identifying the features, functions or attributes of your product/service, process or organization that have the greatest impact on satisfying the customer

QFD Translation and Beginnings

Hin Shitsu
(Quality)

Ki No
(Function)

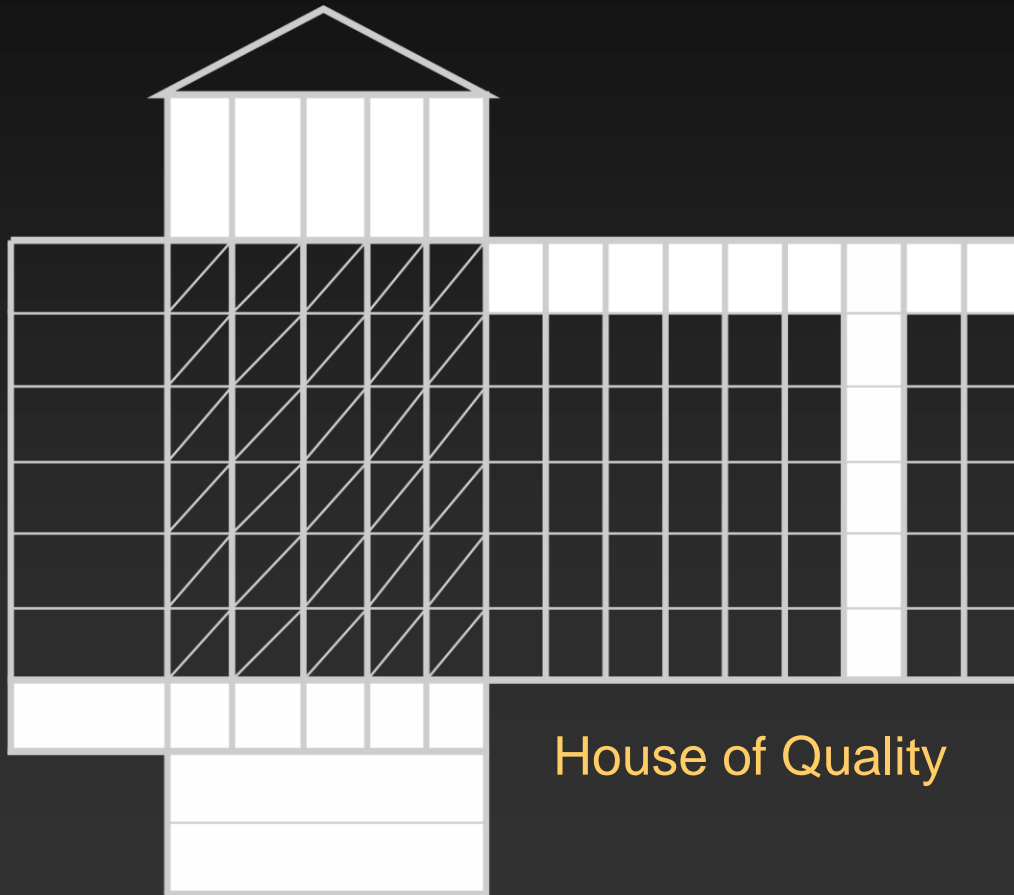
Ten Kai
(Deployment)

- The Term Quality Function Deployment is derived from six characters:
 - *hin shitsu* (qualities, features, or attributes)
 - *ki no* (function)
 - *ten kai* (deployment, development, or diffusion)
- The translation is inexact: Hin shitsu is synonymous with qualities, not quality.
- Credited to Akao and others, used in 1972 in Mitsubishi's Kobe Shipyard

“QFD isn’t a quality tool--although it can certainly improve quality in the broadest sense of the word. Rather, it’s a visually powerful planning tool.”

A technique to focus our teams on delighting the Customers

QFD and the “House of Quality”

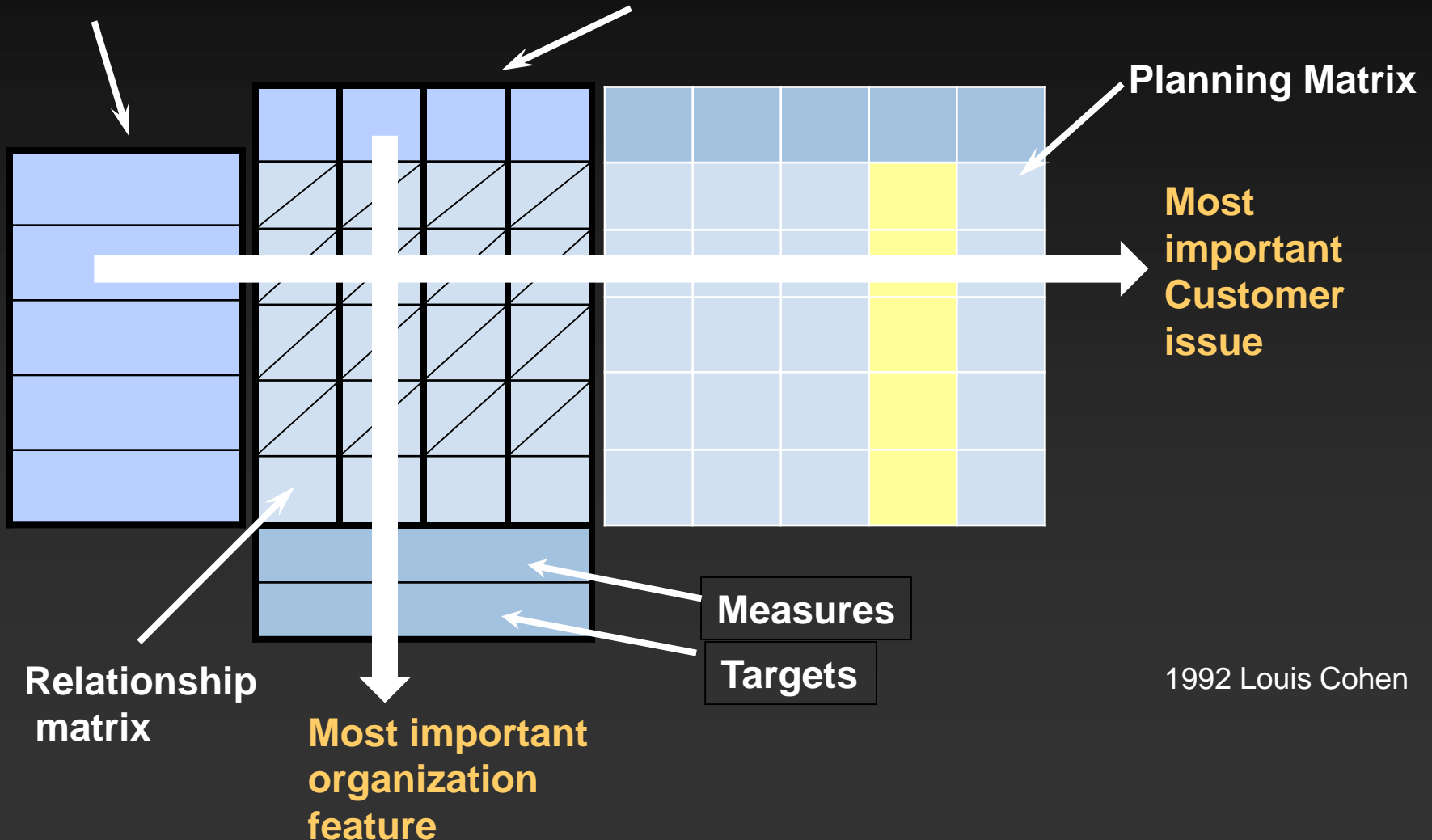


QFD uses a set of matrices or job aid, commonly called the “House of Quality”, that facilitate the analysis of Customer values

HOQ (simplified)

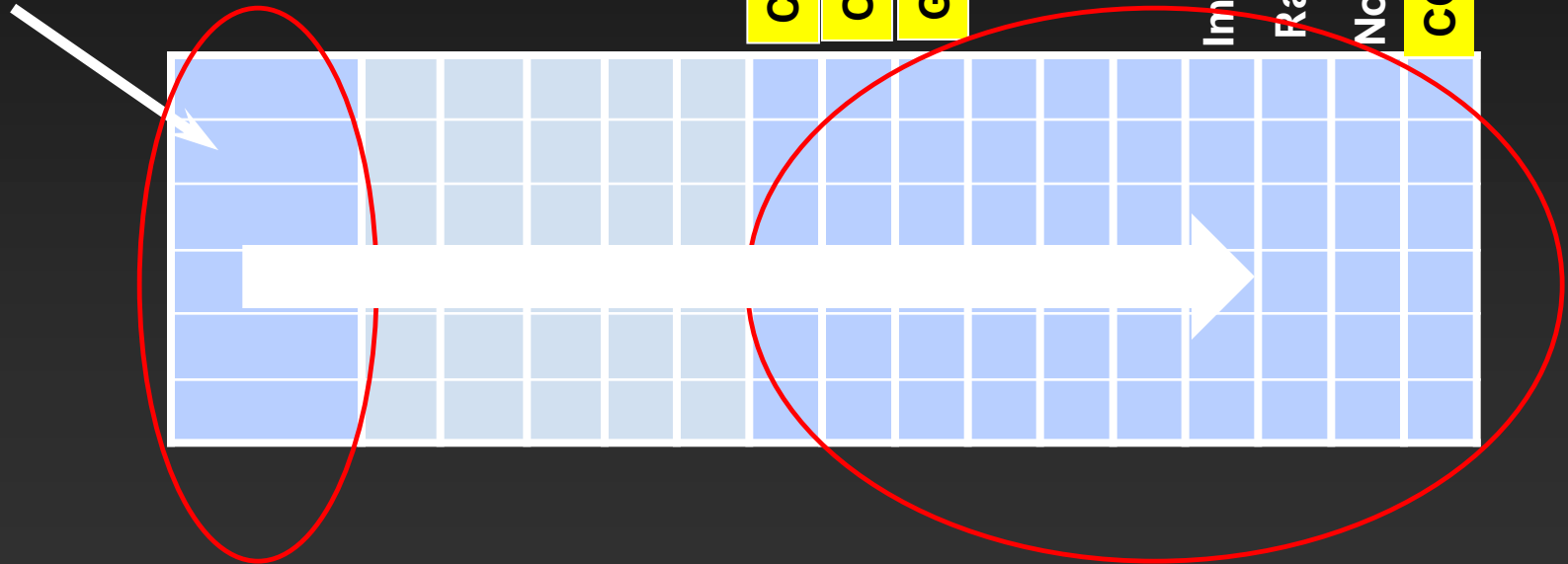
Customer values

Organization Capabilities/Processes



HOQ: Finding Key Customer Issues

Customer values



Planning Matrix

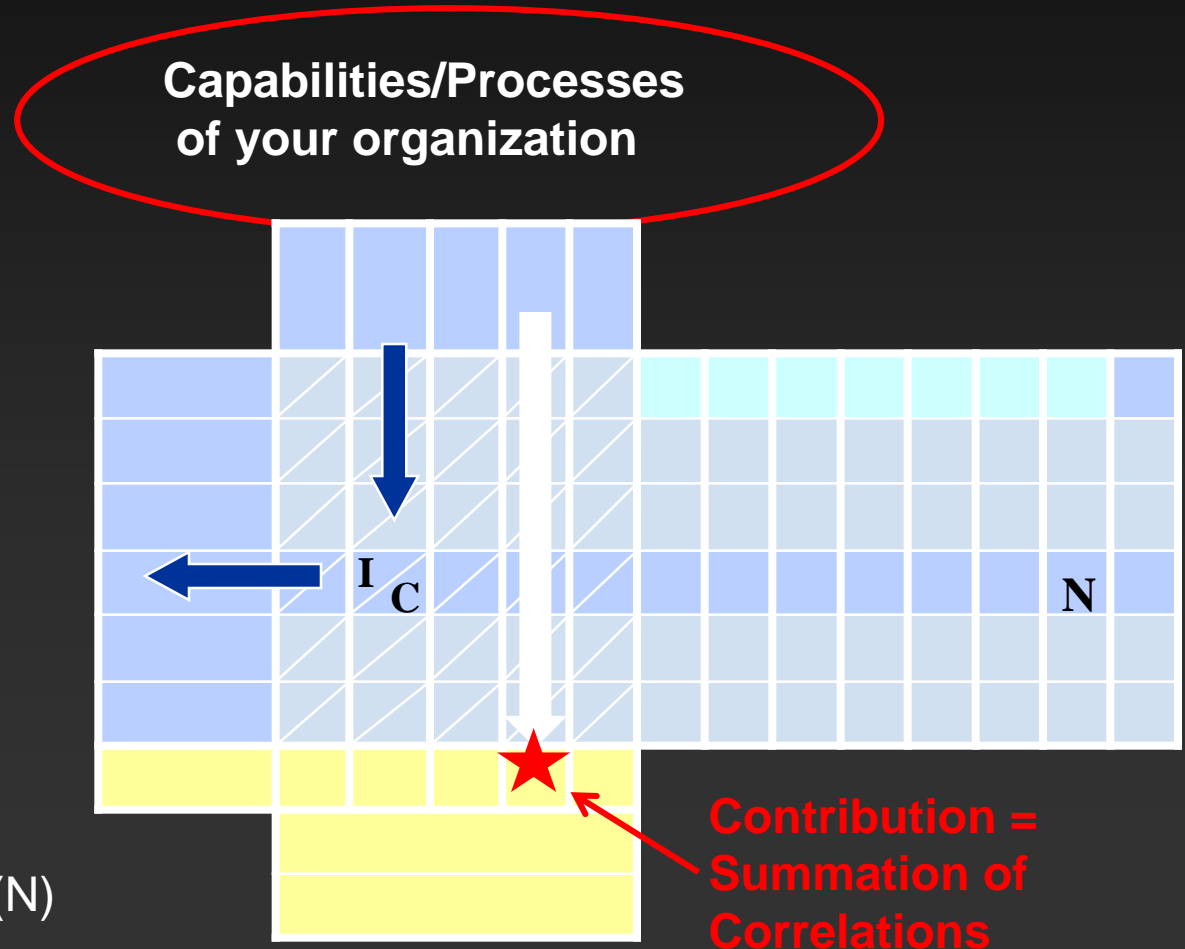
$$\text{Improvement ratio} = (\text{Goal}) / (\text{How well we're doing})$$
$$\text{Raw Weight} = (\text{Customer need}) * (\text{Improvement Ratio})$$

HOQ: Finding Key Capabilities/Processes

Which area of your organization has the greatest impact?

Impact (I) =
0 (no impact)
1 (possible impact)
3 (moderate impact)
5 (high impact)

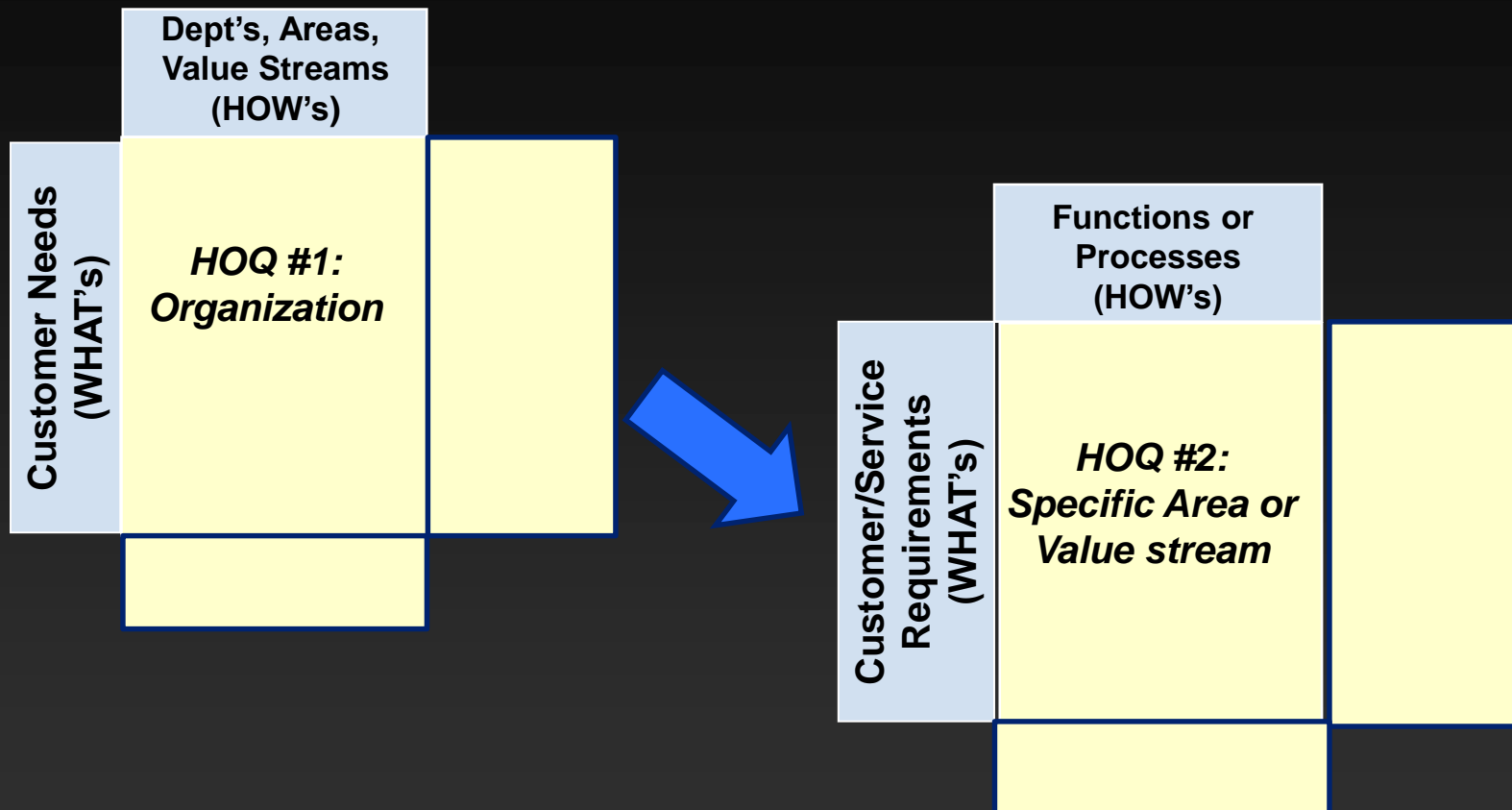
Correlation(C)
= Impact * Raw Weight (N)



QFD: Application Tips

- Customer value data needs to be valid and complete (bad data=bad conclusions). Design surveys appropriately; if using focus groups, ensure facilitators have good skills in communications skills (clarifying and confirming)
- When using the scoring factors (e.g. Customer need, Impact), try to differentiate effectively. Try using a particular score only once (i.e. a single use of 5, single use of 4) or calibrate a scale quantitatively (i.e. an impact of 1 is used for cost impacts < \$1000)
- Selecting the capabilities and processes to be evaluated initially can be confusing. Start by asking yourself what processes, parts of the organization, systems (e.g. computer systems) or enabling functions (HR) potentially have the biggest impact on the customer values
- Often when starting with a QFD analysis at an organization or overall product/service level, an additional QFD of the selected priority area can provide added insight and focus (see graphic on following slide).
- Different versions of the HOQ exist. Some include higher levels of analysis or are tailored to particular settings. Start simple, learn and use what works.

Cascading QFD Analysis



Sometimes analysis requires multiple Houses of Quality at successively smaller increments until areas to attack, or features/ capabilities are clear

**LETS LOOK AT AN EXAMPLE:
“QFD IN CITY GOVERNMENT”**

Organization Name:

City XYZ

QFD Topic:

Drivers, Dept Impact and Measures

Time Period:

Oct13 to Sept14

Date

	Public Works	Water & Sewer	Administration	Legal	Community and Economic Development	Police	Fire	Parks									
<i>Needs</i>	C	C	C	C	C	C	C	C	(a) Need	(b) Our Current Rating	(c) Goal	(d) Improve- ment Ratio = (c)/(b)	(f) Hard Benefit	(g) Raw Weight = (a)*(d)*(f)	(h) Normalized Raw Weight = (g)/(g)	(i) Critical Customer Requirement (CCR)	(j) CCR Target
Effectively Execute committed projects (e.g. greenway, skateway, 412, gateway, wastewater treatment)	5	5	1	3	5	3	1	5	5	2	4	2.00	1	10.00	32%	Budget; On-Time performance	
Maintain Financial Health of City	3	5	5	1	3	3	1	3	5	3.5	4	1.14	1.2	6.86	22%	fund bal > current; bond rating, pay down debt, borrowed from escrow	
Promote and Improve Sustainability and Efficiency of City	3	5	1	1	3	3	3	5	2	1	2	2.00	1	4.00	13%	Carbon Footprint	20% reduction by 2012
Improve Public Safety	0	0	3	3	1	5	5	1	4	4	4	1.00	1	4.00	13%	Crime rate, EMS calls, Total calls	
Manage City Budget; No tax increase in '10	3	5	5	1	3	5	3	3	4	3	4	1.33	1.2	6.40	20%	Revenue=spend; % spend to budget, revenue to budget	
Contribution	102	136	92	59	106	115	68	114	1-5, with 5 being highest need	1-5, with 5 being best performance	1-5, with 5 being best performance			31.26		Customer attribute identified as a CCR with a measure	Target for the measure depicting the CCR

**LETS TRY AN EXAMPLE:
“QFD IN PUBLIC HEALTH”**

Organization Name:

Health Dept XYZ

QFD Topic:

Capabilities, Processes and Programs

Time Period:

Oct13 to Sept14

Date

	Data availability and use	Information Tech Systems	Programs and Develop't	Front Desk	Staff Knowledge and Skills	Education/ Comms programs	Community Partnerships	(a) Need	(b) Our Current Rating	(c) Goal	(d) Improvement Ratio = (c)/(b)	(f) Hard Benefit	(g) Raw Weight = (a)*(d)*(f)	(h) Normalized Raw Weight = (g)/Σ(g)	(i) Critical Customer Requirement (CCR)	(j) CCR Target
Needs	I/C	I/C	I/C	I/C	I/C	I/C	I/C									
Concerned about illness from eating establishments	0	0	0	0	0	0	0				0.00		0.00	0%		
Too many stray or uncontrolled animals	0	0	0	0	0	0	0				0.00		0.00	0%		
Concerned about level of reported child abuse	0	0	0	0	0	0	0				0.00		0.00	0%		
Not sure what services I can use; access	0	0	0	0	0	0	0				0.00		0.00	0%		
Are the services cost effective?	0	0	0	0	0	0	0				0.00		0.00	0%		
Language difficulties	0	0	0	0	0	0	0				0.00		0.00	0%		
Contribution	0	0	0	0	0	0	0	1-5, with 5 being highest need	1-5, with 5 being best performance	1-5, with 5 being best performance			0.00		Customer attribute identified as a CCR with a measure	Target for the measure depicting the CCR

Quality Functional Deployment

A methodology for focusing teams:

1. Finding the most important customer voices/requirements to address
2. Identifying the features, functions or attributes of your product/service or business process that have the greatest impact on satisfying the customer

The result will be an alignment of your improvement efforts that directly impacts our Customers and maximize your resources ...

Going Forward

- Get some help the first time
- Try it
- Make QFD part of your analysis tools in your strategic and annual planning cycles

For More Information

- The QFD Handbook; Jack B. ReVelle, John W. Moran, Charles A. Cox
- Quality Function Deployment: How to Make QFD Work for You; Louis Cohen
- QFD: Linking a Company with its Customers; Ronald G. Day

- Continual Impact LLC
 - Chris Bujak chris.bujak@continualimpact.com
 - Pam Vecellio pam.vecellio@continualimpact.com

Plus Delta

- Did we achieve our goal for today?
- What was valuable?
- What was not?
- What additional information would you like?