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Special thanks to Liam Esmailzadeh, MSE
for his work on portions of the content.

#### Genesis of this presentation

Organisation for Economic Cooperation and Development (OECD)

Governance of Major Public Investment Projects: Principles and Practices in Six Countries

This article compares the Norwegian scheme for quality assurance major public projects with similar project governance schemes in five other OECD countries. <sup>1</sup> All schemes have been introduced since the turn of the millennium and seem to be fairly consistent with recommendations from the project management literature. There are also

#### INTRODUCTION =

and Robengatier (2003b) showed that benefit shortfalls are a consistent problem in the transport sector.

These problems are not limited to the public sector—see, for example, Merrore (2011), who documents similar challenges in her private sector. The public sector, however, has some additional challenges, including multiple array of extramal stakeholders in the democratic decision-making processes (Klakega & Volden, 2016). Public projects are the outcome of a political tung-of-war between stakeholders in society, whose needs and priorities will concur or conflict to varying degrees. The outcomes of such processes are not always predictable. This is clearly shown in Miller and Lessard's study of 60 international projects (Miller & Lessard; 2000). Some authors empha-niculting deliberare misrepresentation in project appressal by promonies; (Hydylerg et al., 2003b), which is referred to as "perverse incentives" by

Project governance includes the processes, systems, and regulations that the financing party must have in place to ensure that projects are successful.

- Volden and Samset (2017)



## Extensive review of U.S. literature concerning the term "project governance" was not fruitful. However,

- project management,
- systems
- administration requirements and
- regulations are all relevant words that are widely used.



Volden, G. H. and Samset, K. 2017, "Governance of Major Public Investment Projects: Principles and Practices in Six Countries", Project Management Journal, Volume 48, Issue 3.

Criteria/Country	Norway	Denmark	Sweden	Netherlands	Kingdom	Quebec
Who initiates the QA process?	Ministry of Finance	Ministry of Transport	Agency	A designated government agency	A designated government agency	A designated government agency
Who decides the choice of concept?	Government	Parliament	Agency or Government	A designated government agency	Treasury <sup>1</sup>	Council of Ministers
Who determines the budget?	Parliament	Parliament	Agency or Government	Government	Treasury	Government
Sectors included <sup>2</sup>	All, with some exceptions <sup>3</sup>	Transport sector	Transport sector	Infrastructure projects	All sectors <sup>4</sup>	Infrastructure projects
Threshold value (million)	NOK 750	DKK 250	No	No	Large projects <sup>5</sup>	CAD 50
Who appraises the project?	Agency or ministry <sup>6</sup>	Agency	Agency and regional authority	Responsible government agency	Agency or ministry	A designated government agency
Who performs quality assurance?	External consultants	External consultants	A designated government agency, and internally	A designated government agency	Independent quality assurers <sup>7</sup>	A designated gov. agency
Requires co-funding from promoters	No	No	No, but may happen	For all in excess of EUR 60 billion	Desired, but no requirement <sup>8</sup>	To be considered, not required
Budgeted cost	P85 (normally)	Basic calculation + 20%9	In the portfolio		Estimate plus supplement	Estimate plus supplements <sup>10</sup>
Target cost	P50 (normally)	Basic calculation + 10%	Budget <sup>11</sup>		Estimate plus supplement	Budget
Decision points	2	2	2	3	5	5
QA or advisory interventions	2	2	Ongoing	1	6	Ongoing
Transparency	Yes	Limited	Limited	Limited	Some	Limited
Portfolio management as part of the scheme	No	No	No	Yes	Yes	Yes
Notes:						

Notes:

Concerns approval of business case; the line ministry may have determined the choice of concept much earlier

Some countries may have different schemes in some sectors

All, except for beath, oil/gas, and state enterprises

Central government infrastructure investments and ICT/restructuring projects

No threshold value, relevant factors are size, complexity, requirement for a separate statute, and the degree of innovation

Seturnal resources are drawn on in some cases, from the private or public sector, including QA resources

Both private and public sector technical experts

This varies between sectors

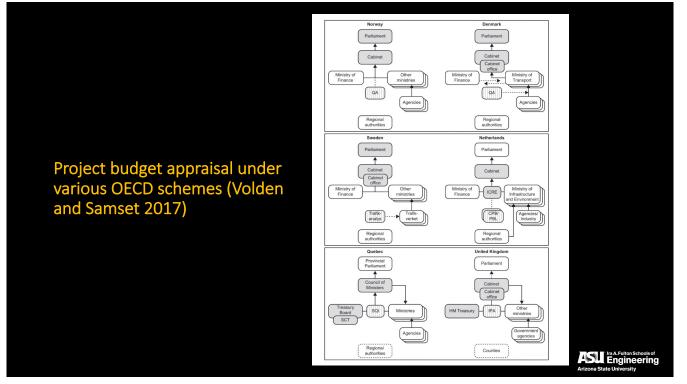
The 20% supplement is managed at the portfolio level and is transferable from one year to the next

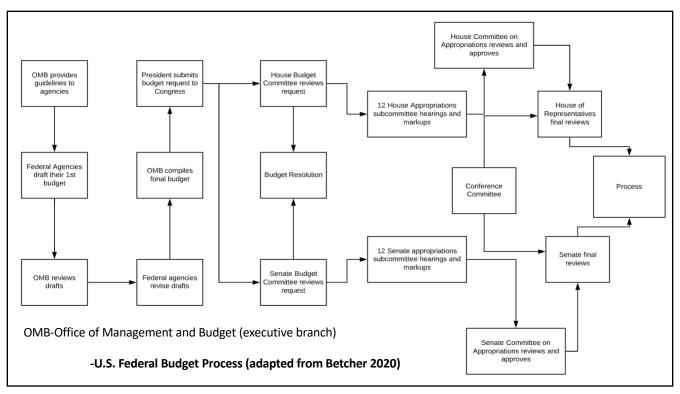
"The government should be informed if it is anticipated that the budget will be overrun

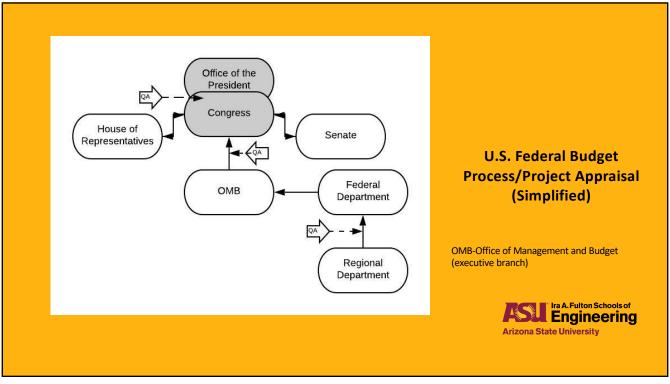
"Recently based on stochastic cost estimation (P50).

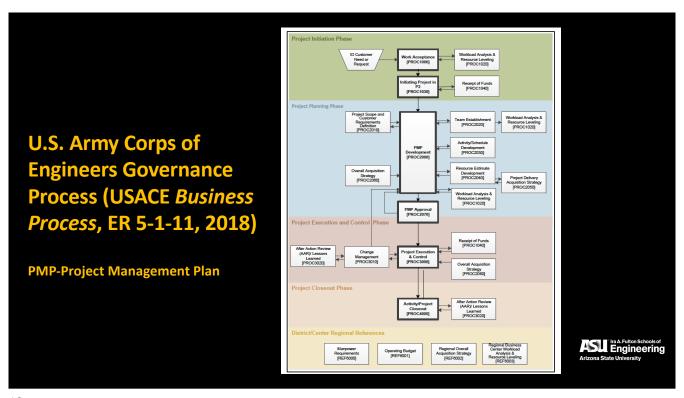
Ira A. Fulton Schools of Engineering **Arizona State University** 

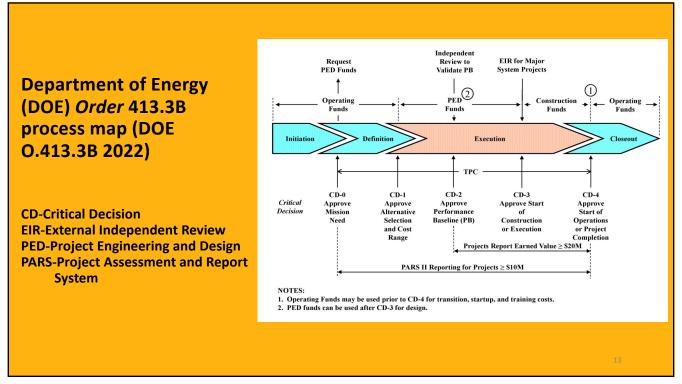
Information/Agency	GSA	FHWA	DOE	USACE
Type of projects	Construction and operations of U.S. governmental buildings	Maintenance and construction of highways	Large science, energy, nuclear, and environmental cleanup	Dams, waterways, infrastructure construction and and operations
Presidential Budget (2019)	\$10.7 billion	\$46 billion	\$30.6 billion	\$4.9 billion
GSA-General Services Ac FHWA-Federal Highway / USACE-US Army Corp of DOE-US Department of E	Administration Engineers	Ariz	Ira A. Fulton Schools of Engineering cona State University	











## **Comparison of Markets**

	United States	United Kingdom	Norway	Sweden	Denmark	Netherlands	Quebec
Construction Market Size (2019 USD)	1.3 Trillion	160 Billion	22 Billion	30 Billion	13 Billion	35 Billion	15 Billion
Private versus Public share	70%-30%	80%-20%	20%-80%	50%-50%	35%-65%	40%-60%	80%-20% (Canada)



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Gibson, G. and Esmailzadeh, P. 2022, unpublished paper "Governance of Major Public Investment Projects: Principles and Practices in the U.S, Federal Government"

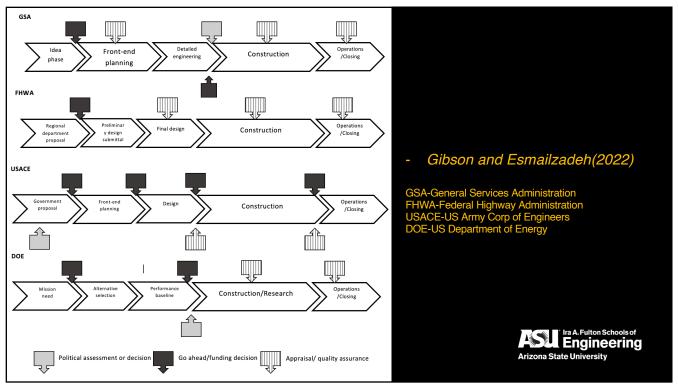
**GAO-General Accounting Office CQM-Construction Quality Management** GSA-General Services Administration FHWA-Federal Highway Administration USACE-US Army Corp of Engineers DOE-US Department of Energy

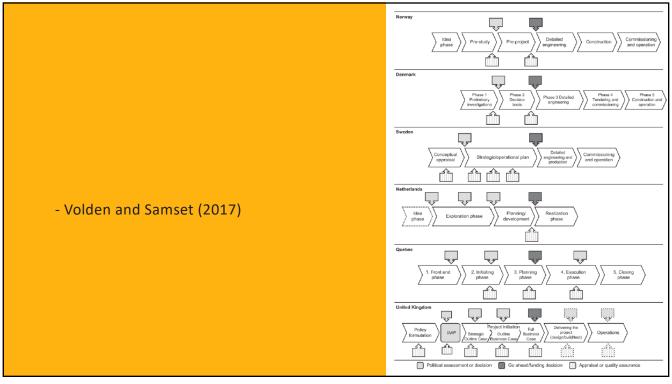


Criteria Agency	GSA	FHWA	DOE	USACE		
Portfolio Management	GSA+ The US Congress	FHWA+Local Jurisdictions + The US Congress	DOE + The US Congress	USACE+ DOD+The US Congress		
Who decides the choice of concept?	Federal Agencies+GSA	FHWA+Local Jurisdictions	DOE+Sub-Organizations*	USACE + Department of Defense(DOD)		
Determination of the budget	GSA Region	FHWA Districts	(Laboratories and subunits)	USACE Districts and Divisions		
Threshold value	\$1-\$5 million***	\$500,000	\$20 Million	\$2 million		
Project appraisal**	GSA Agents	Local DOT	Office of Science+GSA	Sponsor/District appraiser		
Who performs QA	CQM through the agency itself	CQM through the agency itself	CQM through the agency itself	CQM through the agency itself		
Project budget calculation	Internal+External	Internal+External	Internal+External	Internal+External		
Transparency	Inspector General+GAO	Inspector General+GAO	Inspector General+GAO	Inspector General+GAO		
Acquisitions	GSA	FHWA+Local Jurisdiction	DOE	USACE+ DOD		
Co-funding option/ Requirements	None	10% at the State level	None	None		
Table 4 Comparison of the governance schemes in four U.S. federal agencies						
Notes:						
*Department of Science etc.						
**All federal appraisals are done per UASFLA (Uniform Appraisal Standards for Federal Land Acquisition) guidelines.						

CQM: CQM is the performance of tasks, which ensure that construction is performed per plans and specifications, on time, within a defined budget, and a safe work environment.

DOD: Department of Defense

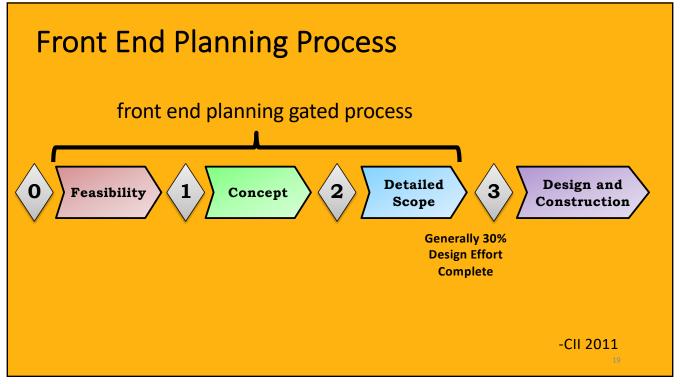


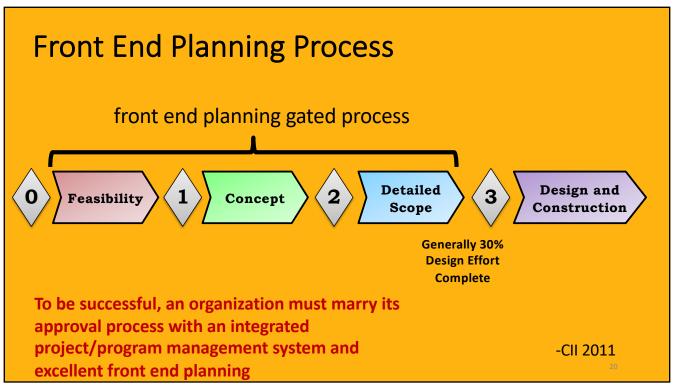


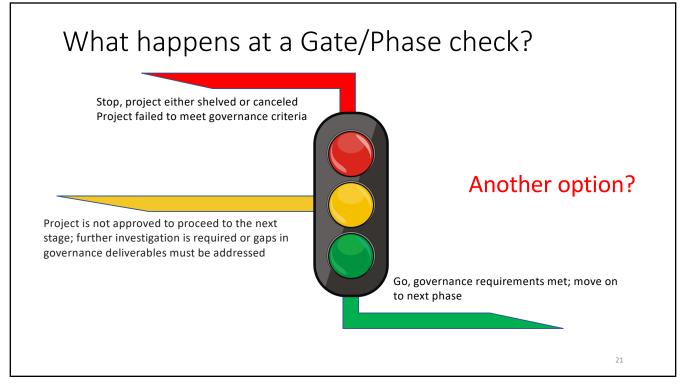
# it starts with excellent front end planning



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Self-governance refers to the capacity of a contractor to govern autonomously. When a contractor instills integrated project/program management principles using the Earned Value Management Systems (EVMS) in a way that benefits all levels of the organization, with results guiding management decisions, leading to improved project/program execution, and optimizing performance of the project/program team

-Gibson et al. 2022



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#### Typical Large and Complex Projects/Programs

- Industrial
- Energy
- Defense
- Aerospace
- Manufacturing
- Infrastructure
- etc.





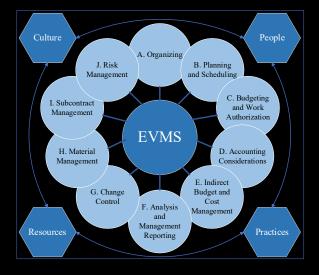








# Self Governance requires a techno-social system approach



Gibson et al. 2022



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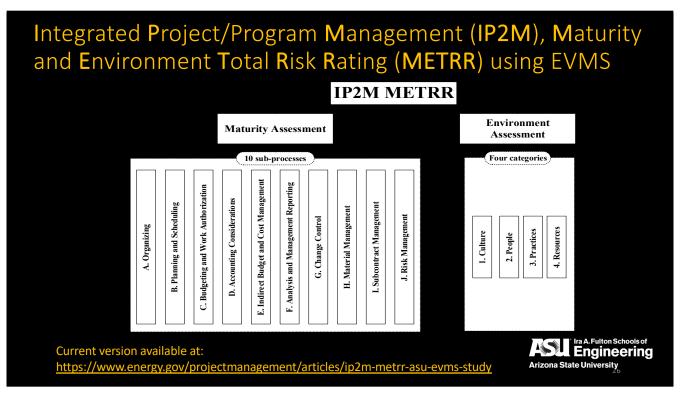
#### **Definitions**

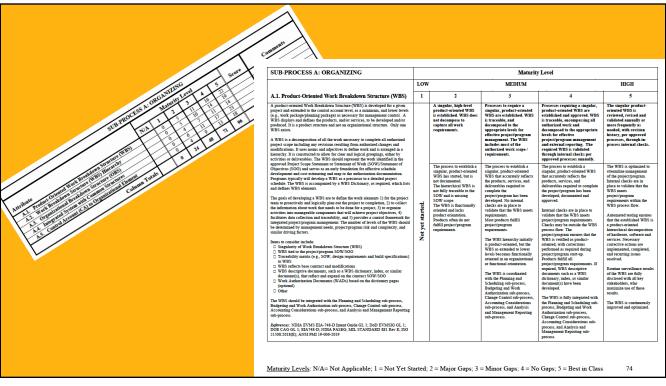
**Earned Value Management (EVM):** The use of performance management information, produced from the EVMS, to plan, direct, control, and forecast the execution and accomplishment of contract/project cost, schedule, and technical performance objectives versus the plan.

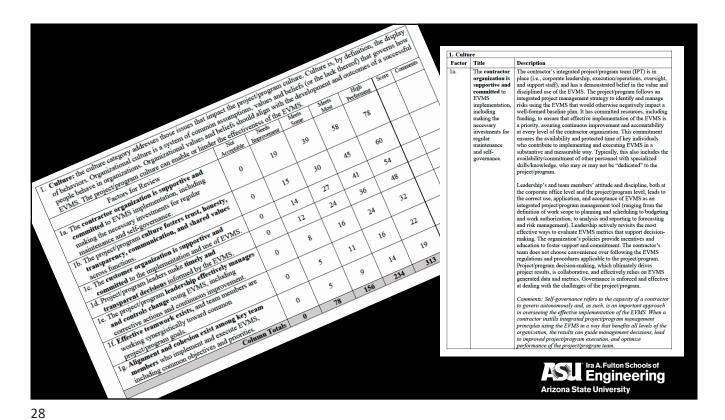
**Earned Value Management System (EVMS):** An organization's management system for project/program management that integrates a defined set of associated work scopes, schedules and budgets for effective planning, performance, and management control. It integrates these functions with other business systems such as accounting and human resources, among others.

**Maturity:** The degree to which an implemented system, associated processes, and deliverables serve as the basis for an effective and compliant EVMS.

**Environment:** The conditions (i.e., people, culture, practices, and resources) that enable or limit the ability to manage the project/program using the EVMS, serving as a basis for timely and effective decision-making.







Final Results: 35 sample projects/programs

- The collected data came from 28 projects and 7 programs, with
- ~\$21.8 Billion USD in installed cost
- · Located in 17 U.S. states and territories:
  - Alabama
  - California
  - Florida
  - Idaho
  - Illinois
  - IndianaLouisiana
  - Missouri
  - New Mexico

- New York
- Pennsylvania
- South Carolina
- Tennessee
- Texas
- Virginia
- Washington
- · Washington DC

• The types of projects/programs they represent, and the maturity and environment scores are shown on the next slide.

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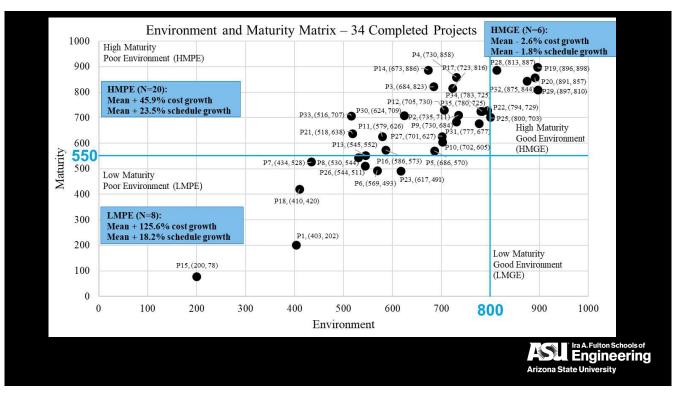
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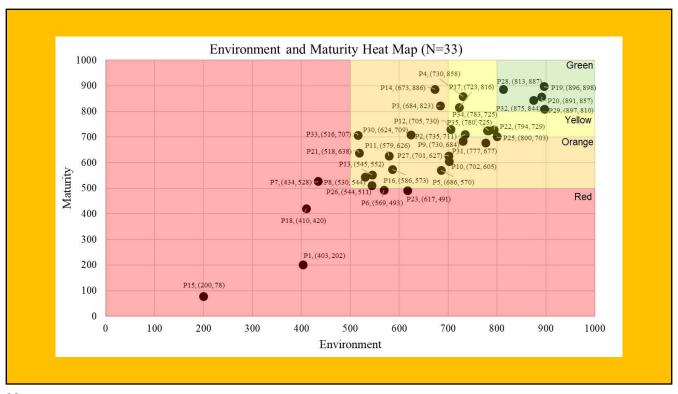
### Large and Complex Projects/Programs (N=35)

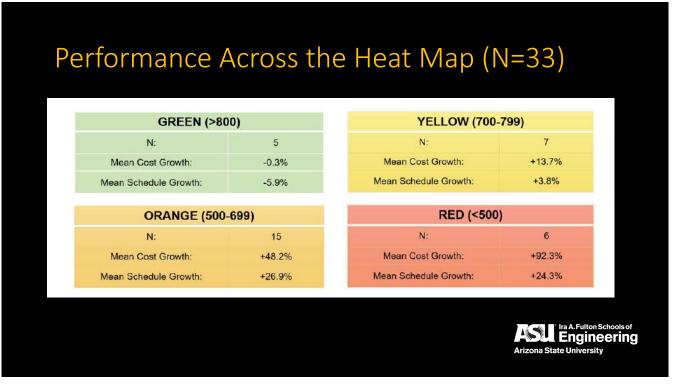
Type of projects/programs	# of projects/programs
Construction	12
Defense	9
Environmental	6
Software	3
Aerospace	3
Science	2

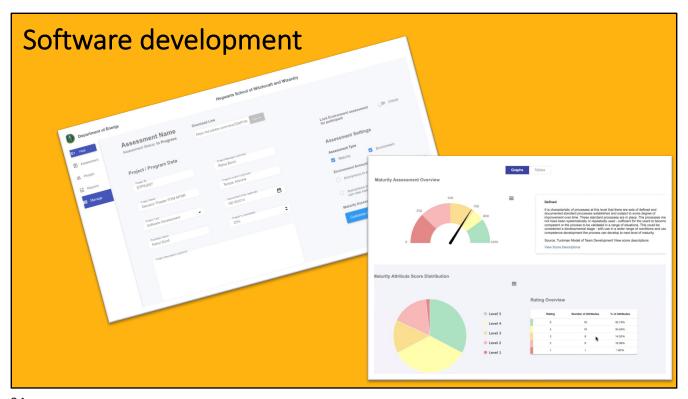


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## Systems Maturity is Important but Environment (Social Context) Matters a lot

M = f(E)

#### • Requires:

- Leadership values, priorities, focus, and commitments
- Weekly/monthly management meetings
- Training
- Self-governance
- Teamwork and team alignment
- Business practices
- Resources



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#### Conclusions (1)

- Governance is not a typical word used for capital programs in the U.S. governments
- Governance in the U.S. is similar to Europe OECD's studied except larger programs and more distributed
- Governance schemes of US Federal Agencies vs six OECD
  - Many similarities in terms of transparency, budget allocation, accountability framework, and organizational flexibility
- Keys:
  - · Oversight, effective gated process decisions
  - ICE, EIR
  - OMB/GAO for accountability
  - Checks and balances
  - Standards and processes



#### Conclusions (2)

- Governance schemes are highly complex, techo-social systems
  - Organizations must address both areas to be successful
- Environment (social) and maturity (technical/process) are positively correlated
- M+E is statistically related to better project/program performance
- IP2M METRR works



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# Further information

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