

Megaprojects & Disputes – Lessons Learned

Session 2.9

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- **50 years experience in construction management, construction claims analysis & dispute resolution**
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- **Former President, AACE International; author of RP 25R-03 (Lost Productivity); contributor to RP 29R-03 (Forensic Schedule Analysis)**
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Lessons Learned

- **Project team selection critical to success**
 - ❖ Starts with program management & contractor teams
 - ❖ Must be based on **experience** with megaprojects
 - ❖ Select senior program management staff **individually** also based on megaproject experience
 - ❖ Program success directly related to personnel & talent
- **Megaprojects need mission statements**
 - ❖ All stakeholders **must** be involved in creation
 - ❖ Sufficiently detailed to allow “**success**” & “**failure**” to be defined, measured & determined

Lessons Learned

- Strategic program planning **essential** for success to include
 - ❖ Assessment & tracking of program objectives, constraints & drivers
 - ❖ Identification, understanding, assessment & tracking of program risks
 - ✓ Both tactical & strategic risks
 - ❖ Develop program estimate plan –
 - ✓ Focus on variables that influence estimate accuracy
 - ✓ Is well documented

Lessons Learned

- **Select optimal program delivery model considering program's –**
 - ❖ **Business goals & objectives**
 - ❖ **Drivers & constraints**
 - ❖ **Scope**
 - ❖ **Risk profile**
 - ❖ **Contracting marketplace**
 - ❖ **Unique attributes of program**

Lessons Learned

- During negotiations with program management team owner & team must –
 - ❖ Establish effective organizational structure
 - ❖ Agree upon & document effective processes & procedures
 - ❖ Establish formal & informal organizational structures that will operate effectively
 - ❖ Keep in mind, programs intended to “**go out of business**”
 - ✓ Program staff should **not** be allowed to treat program as a sinecure

Lessons Learned

- **Pre-planning & planning essential**

- ❖ Program master schedule
- ❖ Construction schedules
- ❖ Work packages for engineering, permits, procurement, logistics & construction
- ❖ Capability gap analysis for owner & program management teams
- ❖ Resource estimates to include labor, contractor availability, cash flow & logistics (i.e., availability, procurement & on time delivery), etc.

Lessons Learned

- **Program management team must establish –**
 - ❖ Program management plan
 - ❖ Standard forms
 - ❖ Uniform project partnering process for all projects
 - ❖ Systems & processes to minimize changes during construction
 - ❖ Crystallized risk analysis & management system
 - ❖ Processes to track & trend project & program costs, labor productivity & projects & program schedules
 - ❖ Process to co-locate project staff with contractor staff

Lessons Learned

- Program management team **must** plan for claims & disputes such as –
 - ❖ Escrow bid document process
 - ❖ Authority delegation
 - ❖ Dispute resolution ladder
 - ❖ Early neutral evaluation
 - ❖ Dispute resolution/adjudication board
 - ❖ Mediation (in various forms)
 - ❖ Arbitration **or** Litigation (in various forms)

Commercial Practices

- Develop uniform contract plan, bid forms, & standard contract documents during front end planning
- Use standard pricing terms & conditions
 - ❖ Lump Sum, Unit Price, Cost Reimbursable, or combination
 - ❖ **Avoid** innovation
- Balance risk allocation & **avoid** onerous contract language
- Match staffing requirements to each contract.
- Everyone in contract chain needs to “**RTFC**” **not** just Contract Managers
- Contracts need to be managed **not** just administered
- Develop good procedures & audit compliance against the procedures

Project Personnel

- Construction has & always will be a “**People Thing**”
 - ❖ People build projects, **not** software!
- Project organization critical & product of project management planning
 - ❖ Having right people & correct number of personnel critical to project & program success
- Plan on fact that there are **not** going to be sufficient qualified personnel available – internally or externally
- Commit to bringing on personnel early for training & development
 - ❖ Duration of project & program should allow staff to gain experience & be promoted
- **Must** have team integration

Project Controls

- Two **most** critical issues on megaprojects are **cost & schedule**
- Accurate monitoring, trending & forecasts depend on good cost & schedule baseline
- Imperative to develop good cost estimate & schedule
 - ❖ Cost estimates **must** be based on current costs but also **expected cost** at completion
 - ✓ Last place for optimism is in the cost estimate!
 - ❖ Schedules **must** be realistic
 - ❖ On 5 to 10 year project probability of finishing on planned date is **virtually non-existent**, plan accordingly
 - ❖ Monitor, trend & forecast costs & schedules regularly & **share** findings with stake holders routinely

Documentation

- Megaprojects generate thousands of documents daily
- Proactive document management system **critical** to success
 - ❖ Set up computerized tracking, storage & retrieval system
 - ❖ Establish document control procedure designed for project
 - ❖ Proscribe handling, storage & distribution of **every** document
 - ❖ Recruit & maintain well trained document control staff
 - ❖ Require **full** participation of all project personnel, contractors & vendors
- **Imperative** that right information gets to right person in timely manner to make right decisions
- Critical to defend against potential claims, disputes & litigation

Project Priorities

- Project priorities – function of contract type
- Priorities **must** be set as part of project planning
- Once project starts & independent of contract type priorities **must** be

1. Safety	2. Schedule
3. Quality	4. Cost

- Safety – **number one** as it is a matter of human dignity, **not** saving money, morale or fewer labor disruptions
- Dedication to safety sets behavioral standard for everything

Dispute Resolution

- **Avoidance** – best way to resolve disputes
 - ❖ Initiate **proactive** disputes avoidance program from start of megaproject – biddability, constructability & claims prevention reviews, etc.
 - ❖ Involve contractors & project team
 - ❖ Key = communication, communication, communication!
 - ❖ Know what root causes for most claims & disputes
 - ❖ Do **not** let conflicts escalate into claims or disputes
 - ❖ Be proactive, anticipate & resolve issues at **project level**
- **DRBs/DABs reduce costs & provide more timely resolution of disputes.**
- **Arbitration preferable to litigation**

Do All This & You Are Guaranteed Success, Right?

“It ain’t necessarily so!”

- Definitely improves your odds
 - ❖ CII, IPA & project partnering survey data proves this
- Key= **not** only talk about lessons of past but truly implement mitigating measures
- Many strategic considerations traditional project objective controls will **not** capture or fix

Flyvbjerg's "Iron Law"

- **Four tensions**

- ❖ A (very) long history of "failure"

- ✓ Merrow, Ernst & Young, McKinsey = Flyvbjerg's "Iron Law"

- ❖ Megaprojects a function of hubris, **not** just demand

- ❖ Projects often poorly scoped from outset due to past habits

- ✓ Risk allocated unilaterally & improperly

- ❖ Projects often delivered by inexperienced project teams

- ✓ Get trapped in "break fix model"

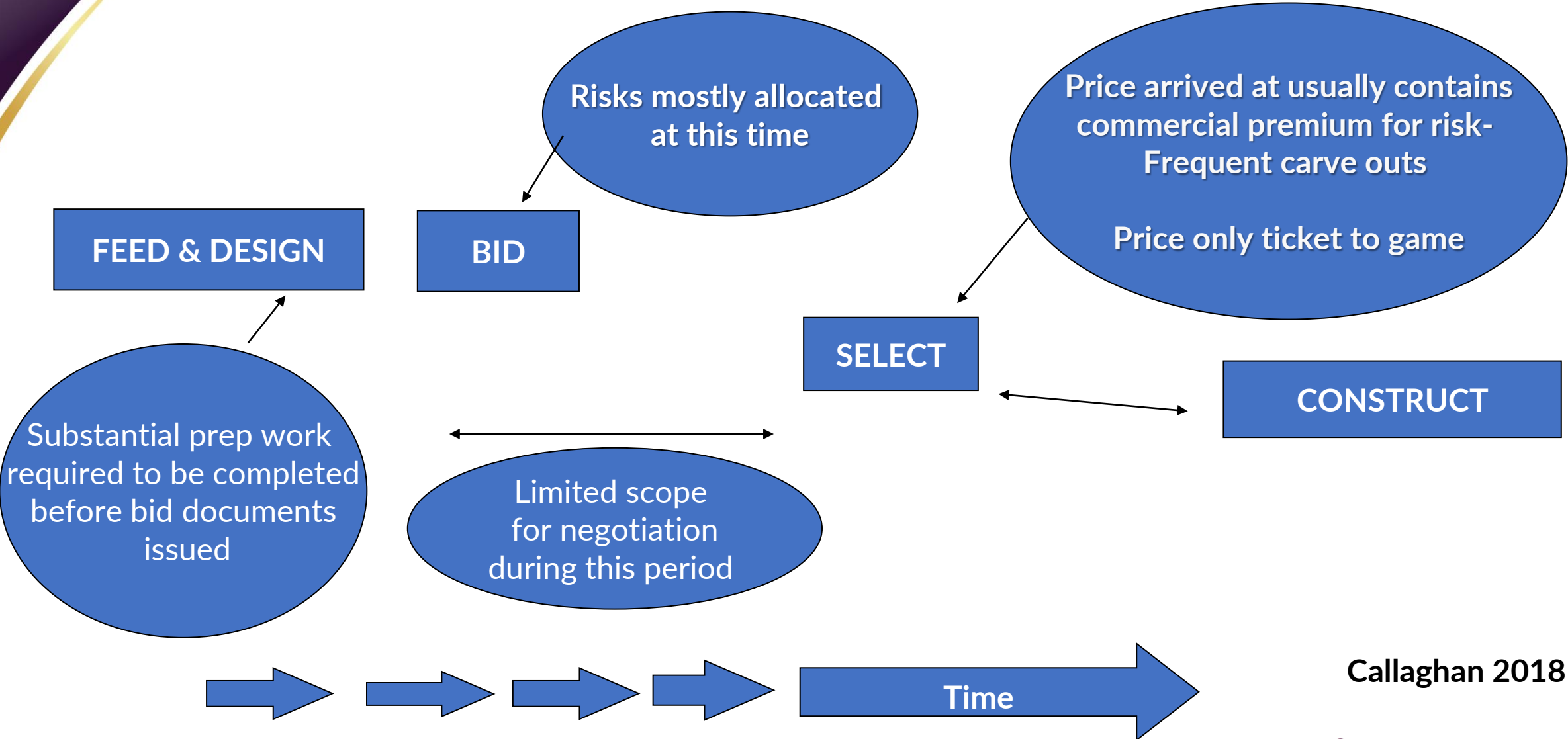
Measuring Success

- Project motivations **vs** project outcomes
 - ❖ **Mismatched objectives**
- Flyvbjerg's 'Four sublimes'
 - ❖ **Technological** – A/Es want to push boundaries
 - ❖ **Political** – Politicians love to open completed projects
 - ❖ **Economic** – Lots of \$\$ to be made from megaprojects
 - ❖ **Aesthetic** – Want to build something iconically beautiful
- **False premises** - cost and schedule certainty
- **Optimism bias** -
<https://www.gov.uk/government/publications/rail-infrastructure-optimism-bias-study>

Habituation

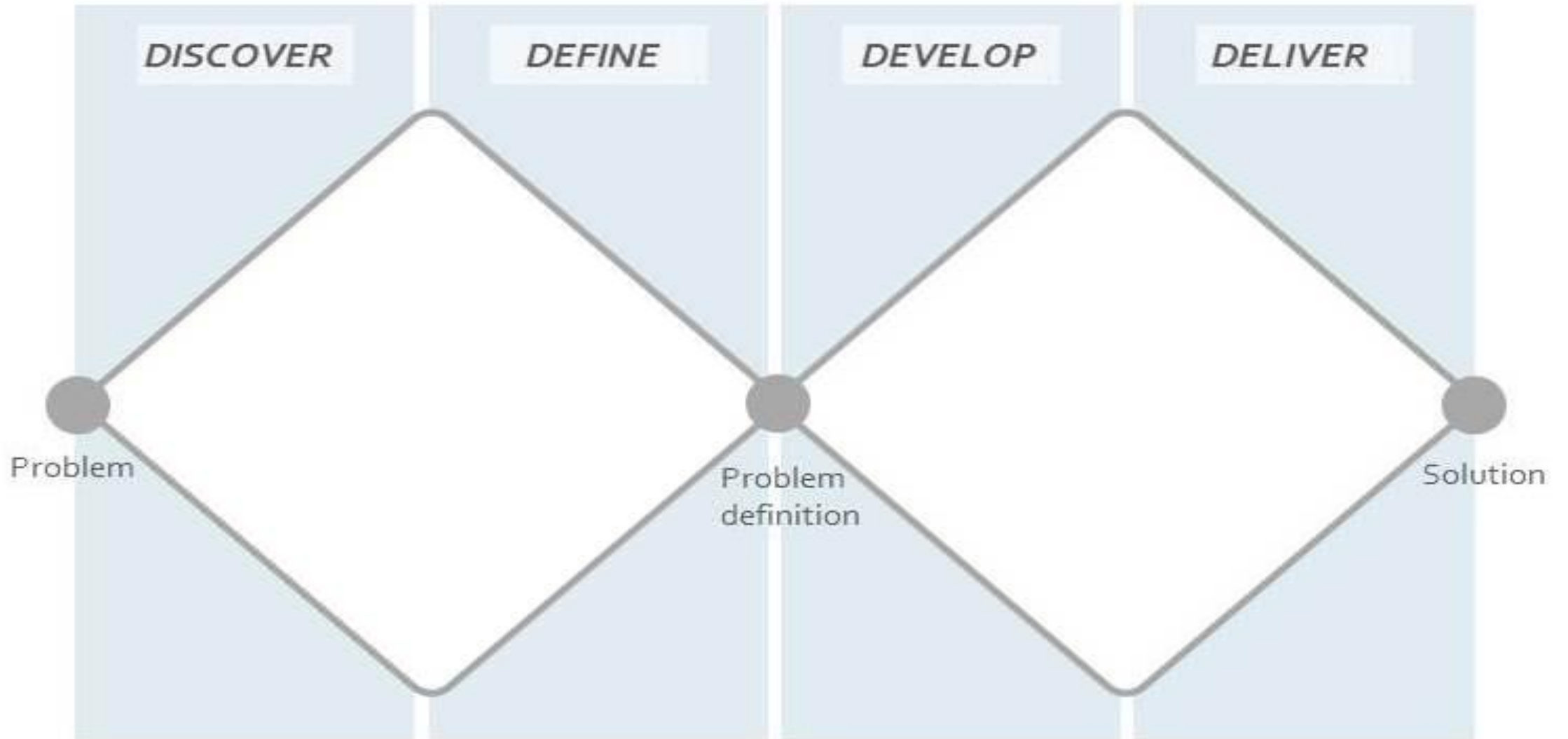
- “Habituation” = relying **exclusively** on past habits
 - ❖ *Unwillingness, inability to adopt new processes & procedures*
- Risk of “habituation” (Bresnen & Haslam 1991)
 - ❖ *“An area of intense disagreement and almost religious like fervour”*
- Examples
 - ❖ Illusion of wholesale risk transfer
 - ❖ Influence of external financiers
 - ❖ Lack of accountability of drafters

Traditional/Unilateral



Callaghan 2018

Innovative/Complimentary



“Break Fix”

- “Break fix” cycle
- Misguided trade offs
 - ❖ Trading quality for low cost \neq operability
 - ❖ Trading cost for fast schedules \neq ROI return
 - ❖ Trading quality for fast schedules \neq operability
 - ❖ Trading safety for speed \neq licence to operate
- Case of Heathrow Terminal 5

Strategic Lessons

- External factors drive large risks for megaprojects
- Books & papers written with terminology
 - ❖ **Black Swans** – unforeseen events with major effect **not** under control of parties involved - tend to be rationalised with benefit of hindsight
 - ❖ **Meta Organization** – mega projects affect & involve parties outside normal stakeholders - parties become a part of project fabric & impact outcome **more than** most estimates allow for or teams equipped to manage
 - ❖ **Cumulative Effect & Project Turbulence** – cumulative effect of external influences leads to project turbulence where team loses control of project

Strategic Challenges - Shift Happens

- **Political Intervention**
 - ❖ Local, regional, country, global
- **Third party interest groups**
- **Volatility in commodity markets & inflation**
- **Industry productivity**
- **Global unrest**
- **Craft labor shortage**
- **Logistic & supply chains unreliable**
- **Continuing impact of COVID 19**

Strategic Lessons

- **Expectation management – dealing with strategic issues**
 - ❖ Once project sanctioned measure of success **not** whether there are issues but rather dealt with
 - ❖ Ensure owners & risk takers prepared for challenges by educating all on lessons learned, paths taken & risks involved
 - ❖ When challenges materialize support for team **critical**, inexperienced owners & investors often panic & look for someone to shoot
 - ❖ Provided team is following good practice, support when times are tough **critical**
 - ❖ **Bad news delivered early is useful information. Bad news delivered late is a disaster!**

Strategic Lessons – Solutions to Strategic Challenges

- Make contracts flexible to allow adjustment for Black Swans
- Use contract but do **not** rely solely on it
- Be prepared to negotiate focusing on what's best for project
 - ❖ Think outside the box to deal with Black Swans & Project Turbulence
- Build relationships with Meta Organization to deal with challenges
 - ❖ Educate & manage expectations early & often
 - ❖ **Don't bring problems, bring solutions!**

Questions & Discussion

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THANK YOU