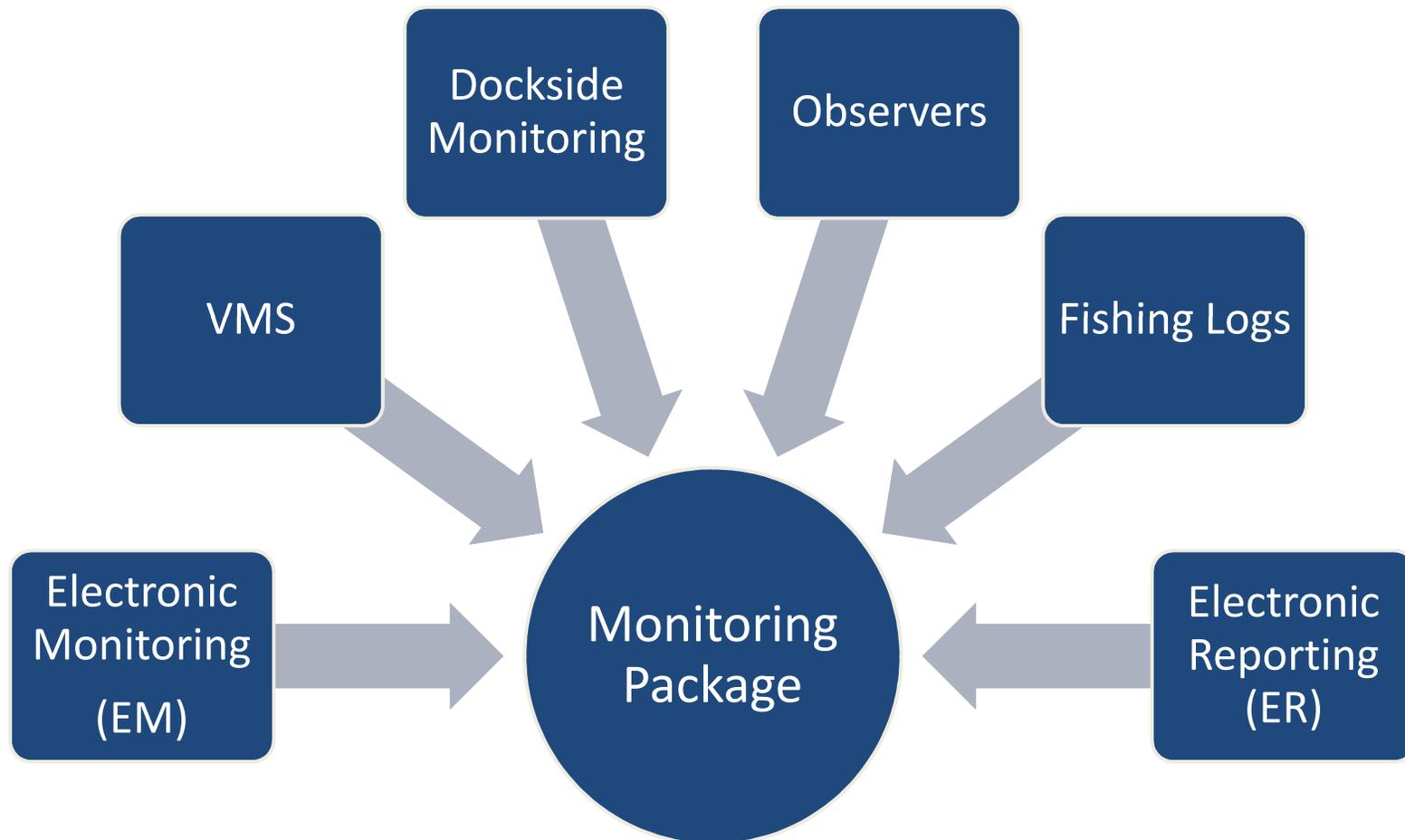




# EM Program Design: Moving from proof of concept to an operational EM Program

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# 1. Think about the whole package





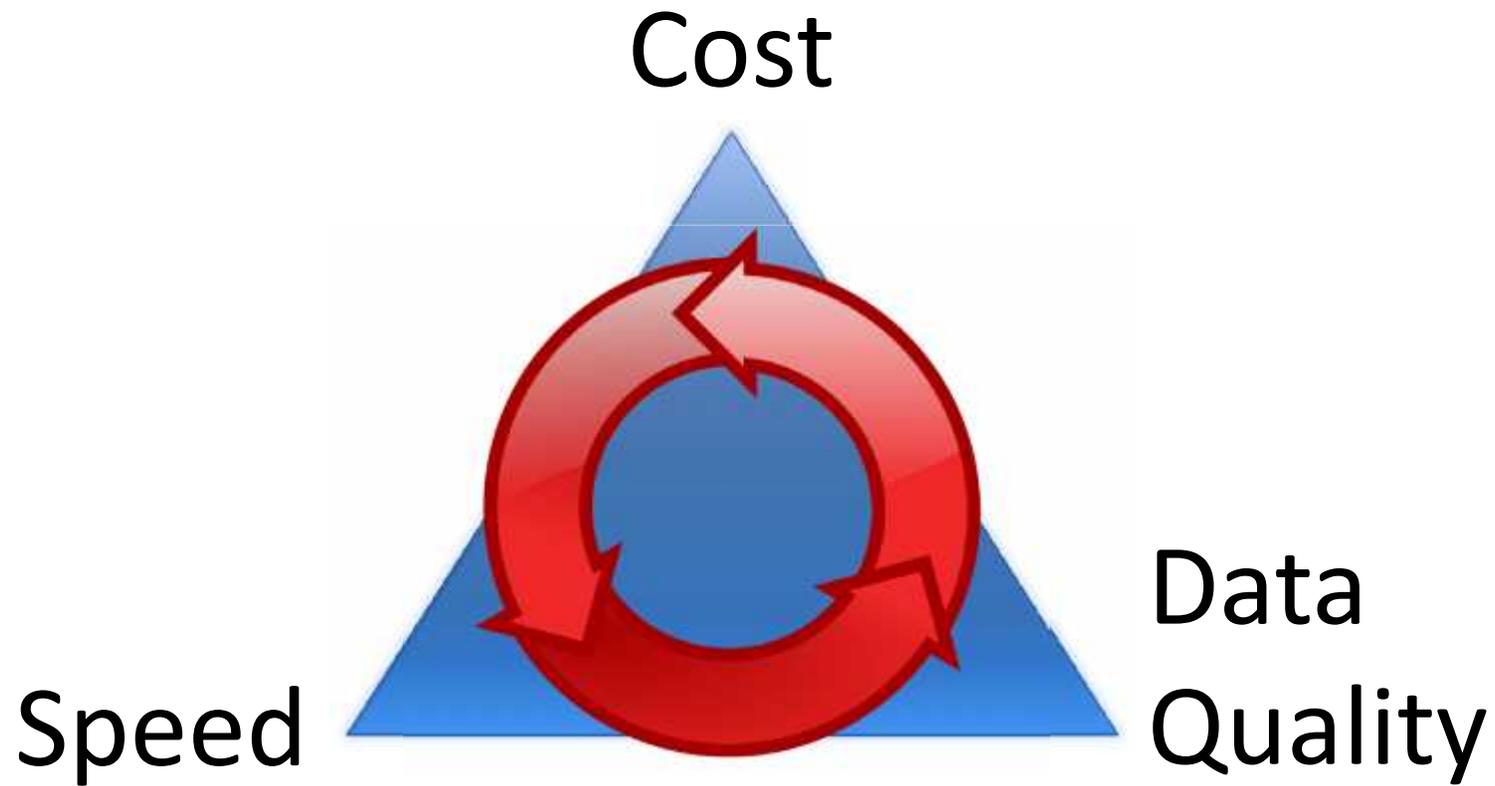
## 2. There are financial limitations.

And they need to be shared across all the components of the monitoring package.

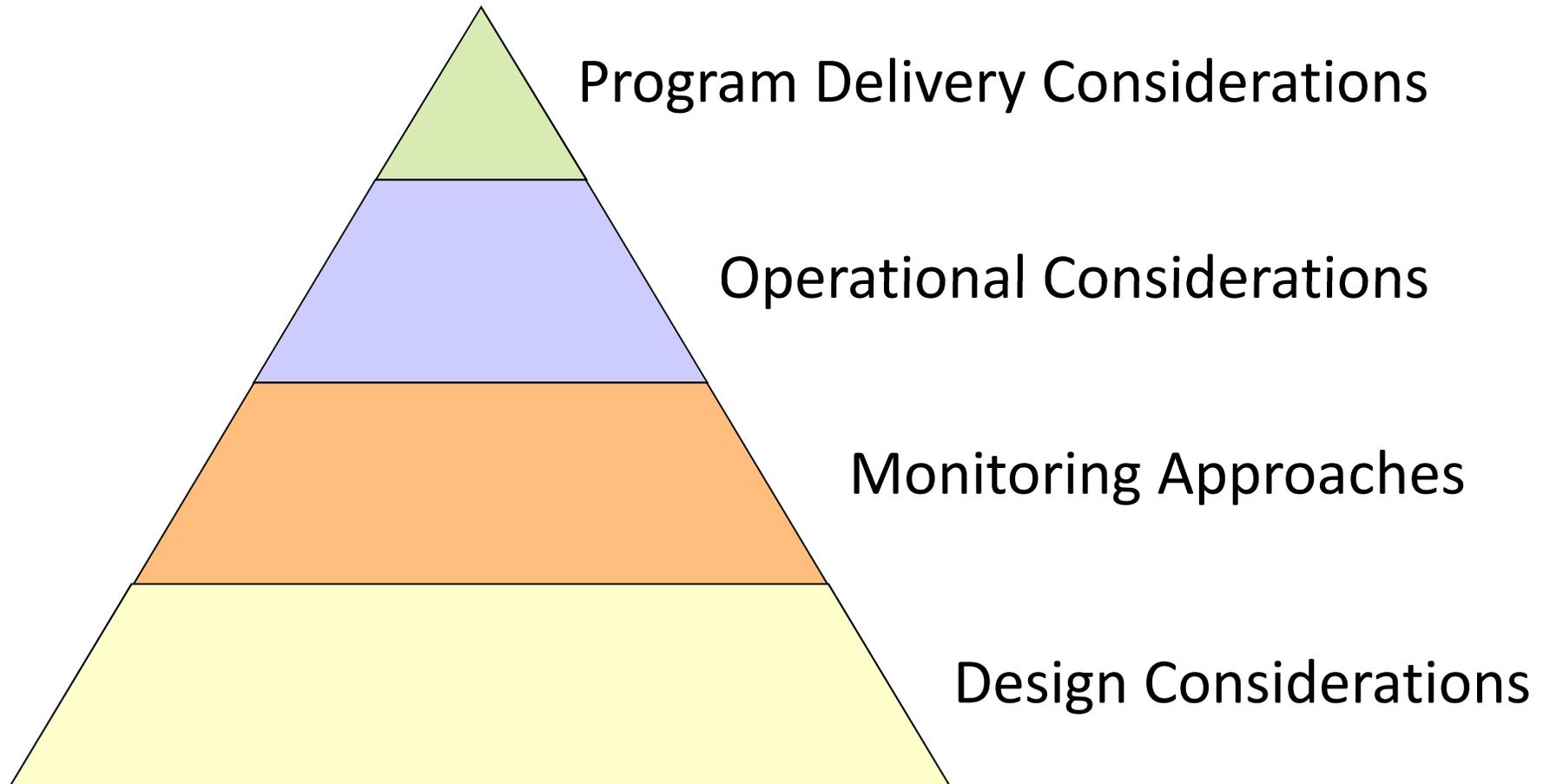




### 3. It is a balancing act.



# Program Design Planning





## Design Considerations:

- Monitoring Objectives
- Regulations
- Vessel Characteristics
- Catch Method
- Catch Composition
- Fleet Monitoring - Sample or Census?
- Fleet Receptiveness to Monitoring
- Fishery Value



# Monitoring Approaches

- Strategies for fulfilling the monitoring objectives and information requirements.





# Complexity Spectrum

Monitoring Objective	EM Analysis Effort	Vessel Crew Effort
Vessel Location (VMS data)	Nil	Nil
Vessel Activity (including fishing effort)	Very Low	Nil
Mitigation Compliance	Low	Nil
Catch Handling Protocols	Low	Low
Full Retention Compliance	Low	Low
Limited Discarding	Low-Medium	Low
Unlimited Discarding	Medium	Low-Medium
Limited Catch Accounting	Medium-High	Low-Medium
Full Catch Accounting	High	High



# EM Operational Components

## Outreach and Management

Data Analysis  
Services



Field Services

Technology



## Field Services

### Fishery Characteristics

- Number of Vessels
- Spatial and Temporal Fleet Distribution
- Fleet Coverage Levels

### Service Requirements

- Service Locations
- Number of Technicians
- Response Requirements

## Data Services

### Fishery Characteristics

- Data Volume
- Number of Data Units

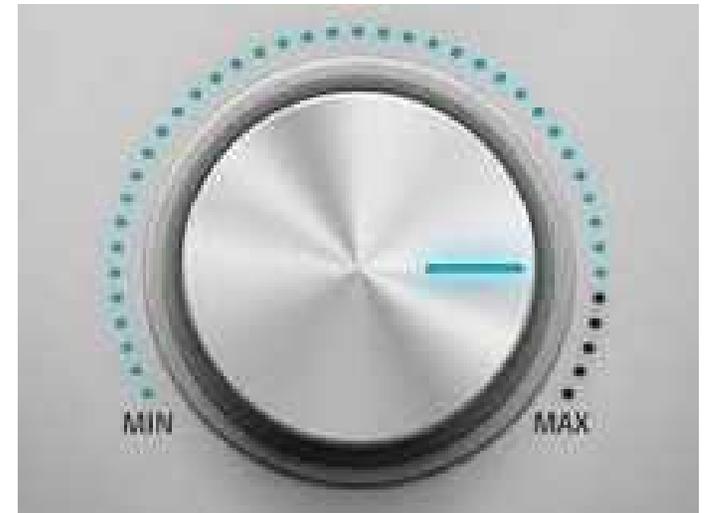
### Service Requirements

- Analysis Requirements
- Response Timelines
- Number of Data Users



## Adjusting the Dials

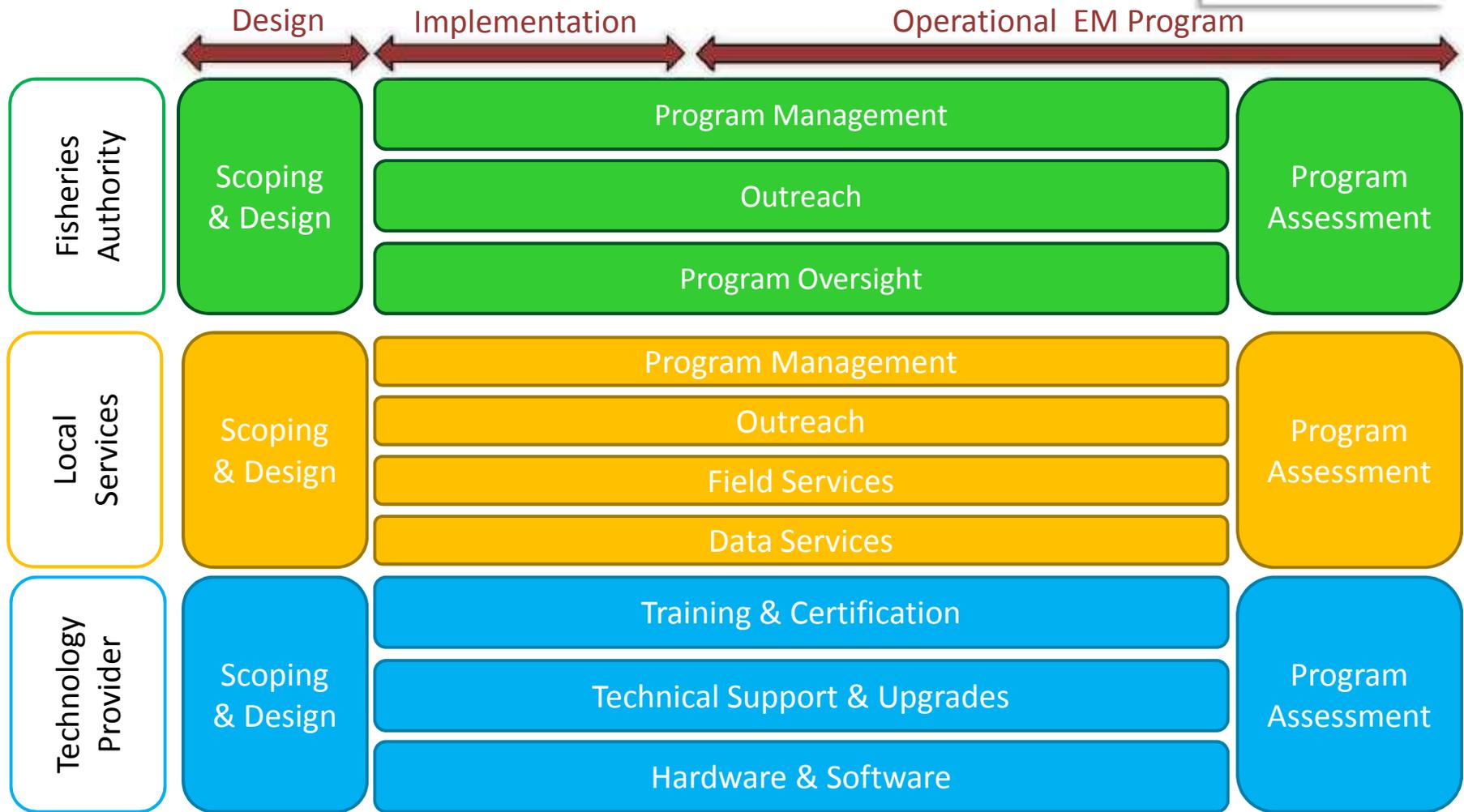
- Review level
- Data detail
- Reporting frequency
- Data retrieval frequency
- Travel
- Outreach
- Program Management





# EM Program Delivery Considerations

- Program Governance
- Service Delivery Framework (who is doing what?)
- Cost Recovery Framework (how is program funded?)
- Level of Industry Engagement
- Incentive Structure (carrot or stick?)
- Regulatory Framework





# Summary

- EM is not a 'Plug and Play' solution
- Successful implementation of EM requires a Comprehensive Planning Approach.
  1. Document the design considerations
  2. Draw plausible monitoring approaches that could fit the fishery
  3. Look at how it would work operationally- basics first and add layers
- EM can provide cost effective monitoring, but only by design!



*Thanks!*