Changing How the World Builds

CII Project Health Indicator

Anticipate your project's performance and inform your action plans

CII Webinar

August 27, 2020

General Information

- Webinar is being recorded
- Please stay on mute
- Recording and slides available at www.construction-institute.org/blog
- Ask questions via “Questions” box

Speakers

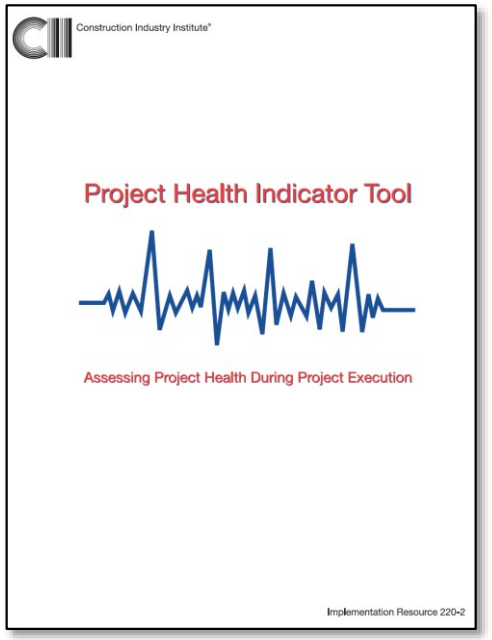
Mike Pappas, CII Associate Director for Deployment

Gerry Sepe, CEO of ePM

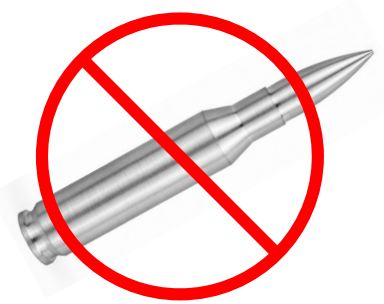
Agenda

- Background / Research
- Leading Indicators
- Inputs
- Outputs
- Question & Answer

Project Health Indicator (IR 220-2)

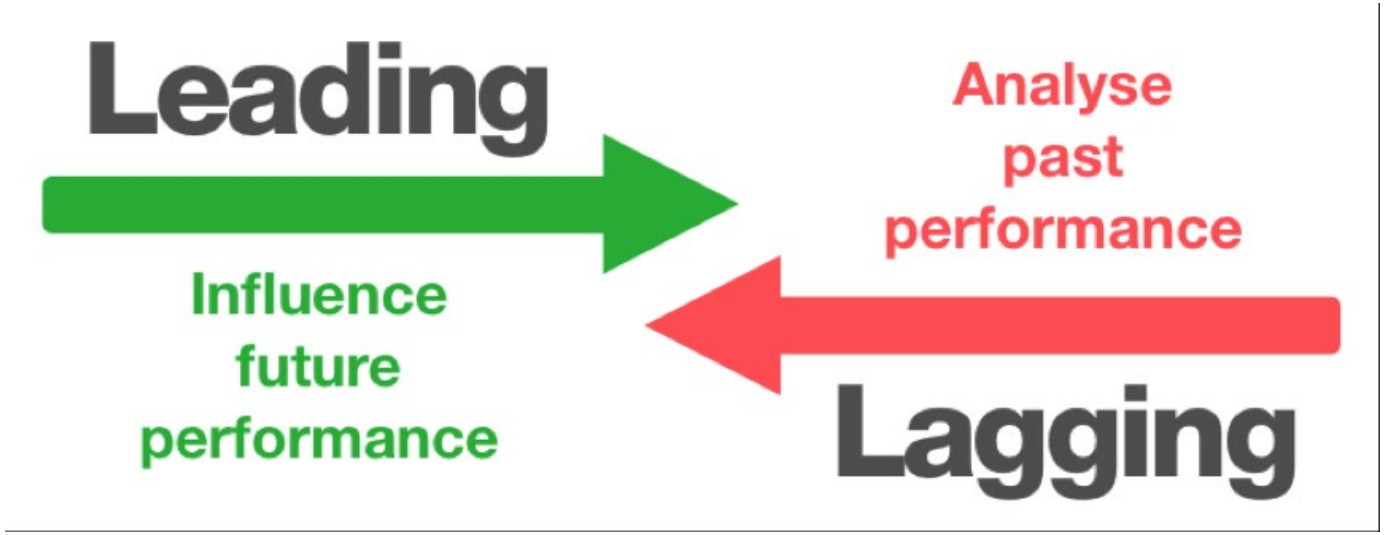


- Designed for use during Execution
- Intended to quantify subjective aspects of performance
- 43 Leading Indicators
- Implementation:
  - Use in addition to traditional project controls measures
  - Use with a neutral facilitator and project team
  - ~45-60 minutes to complete the questionnaire
  - Score is a measure of potential risk of not achieving desired outcomes
  - Take action!
  - Use monthly or quarterly to track trends and identify issues

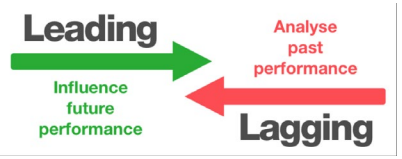


Leading Indicators

- Leading indicators are fundamental project characteristics and/or events that reflect or predict project health. Revealed in a timely manner, these indicators allow for proactive management to influence project outcomes.

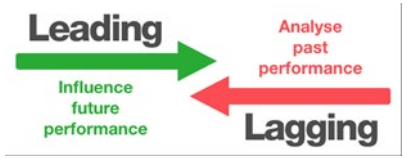


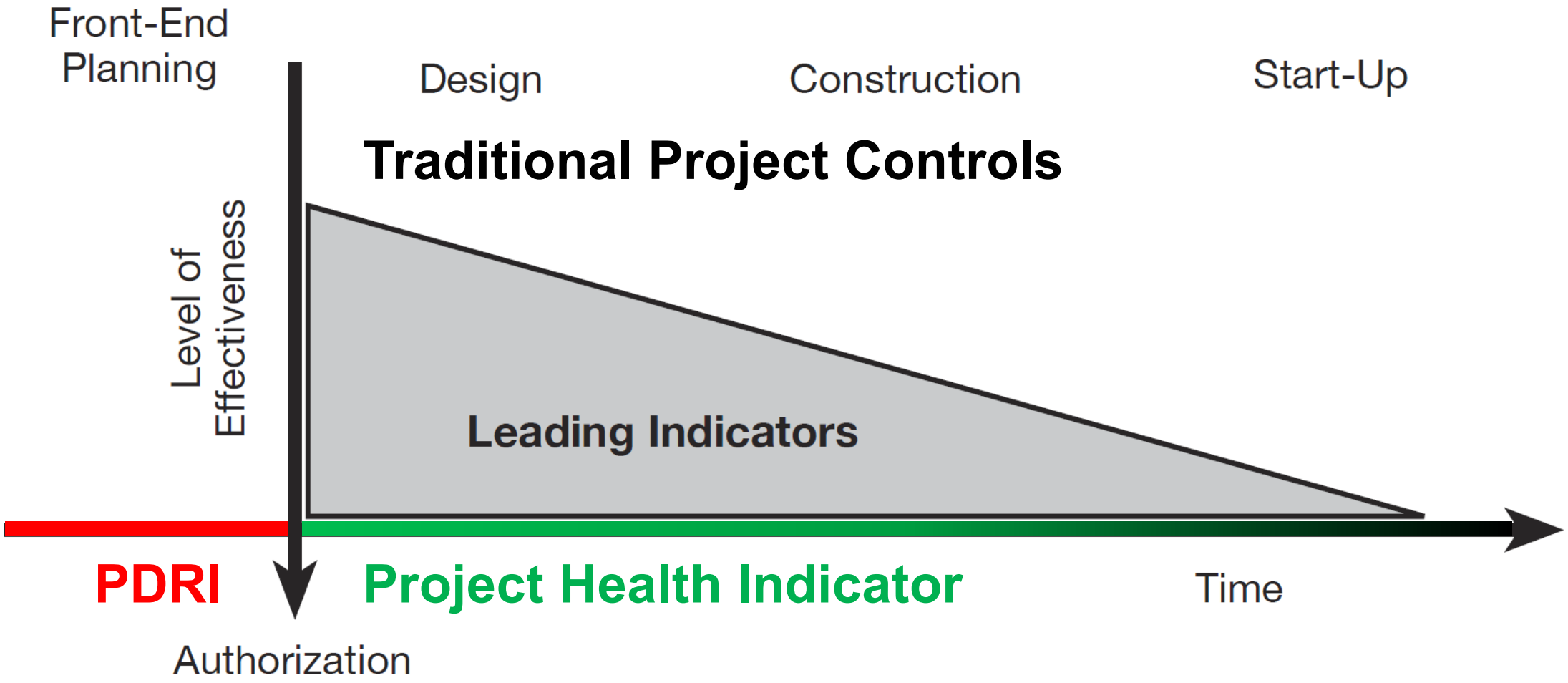
Leading Indicators – examples



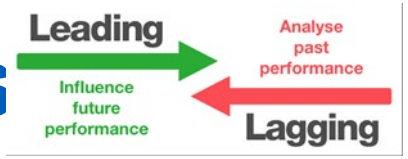
- The project team is experiencing a high turnover rate and instability in team membership.
- The project team is losing confidence in the accuracy and validity in the schedule.
- Owner and Contractor personnel are not properly aligned.
- The PM is lacking the required level of experience and skills.

Application of PHI



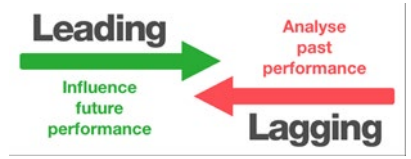


Project Health Indicator – input statements



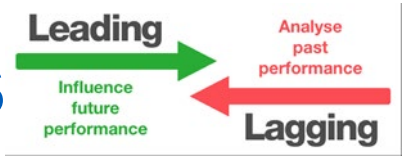
	Leading Indicators
1	The project team is lacking in the necessary expertise, experience, breadth, and depth to successfully execute the project.
2	The project team is experiencing a high turnover rate and instability in team membership.
3	The project team's response to Requests for Information, questions, and changing events that can significantly impact the project results is slow, inadequate, or incomplete.
4	The project team is losing confidence in the accuracy and validity of the schedule.
5	Project milestones are not being met and are consequently jeopardizing future project milestones.
6	Construction is awarded before adequate completion of project design, including discipline design packages, resulting in an incomplete scope definition at time of award/start of construction.
7	Business goals, project objectives and priorities, and critical success factors are not being consistently used by project team members and key stakeholders to guide decisions.

Project Health Indicator – input



1. The project team is lacking in the necessary expertise, experience, breadth, and depth to successfully execute the project.					
1 SERIOUS	2 MAJOR	3 MODERATE	4 MINOR	5 NONE	NOT APPLICABLE
○	○	○	○	○	○
Move pointer here for measurement criteria of above Leading Indicator					RESET ○
2. The project team is experiencing a high turnover rate and instability in team membership.					
1 SERIOUS	2 MAJOR	3 MODERATE	4 MINOR	5 NONE	NOT APPLICABLE
○	○	○	○	○	○
Move pointer here for measurement criteria of above Leading Indicator					RESET ○

Leading Indicators – Detailed Descriptions



Leading Indicator 4

The project team is losing confidence in the accuracy and validity of the schedule.

Measurement Considerations

1 The project schedule is not consulted on a weekly basis to monitor progress and set priorities. The team has no confidence in the schedule.

2 The project schedule is consulted on an ad hoc basis by most team members, but does not tend to influence work priorities. Multiple inaccuracies have been found in the schedule.

3 The project schedule is regularly used by the Project Controls people, but engineering and/or construction are managing the work by "gut feel." The schedule has some significant inaccuracies.

4 The project schedule is consulted by all key stakeholders, but the sequence of work and critical path shown do not reflect the opinions of key stakeholders.

5 The project schedule is consistently used as a tool by key stakeholders. The general logic and critical path are agreed. The schedule is adjusted as warranted.

Description

There appears to be a lack of alignment amongst the project team members and other key stakeholders associated with the accuracy and validity of the schedule. Confidence in the schedule is paramount. If the validity of the schedule is placed under suspicion, the team loses the sense of urgency toward meeting the schedule target dates due to the diminished confidence in the schedule.

For a schedule to be a key project document, it has to be treated as a "tool" and not a "deliverable." Schedules will change during the course of a project – but the baseline schedule should remain fixed.

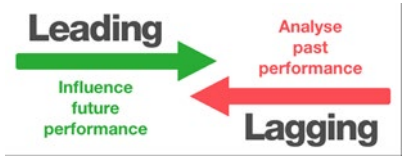
Source Documents

- Project Schedule
- Progress Monitoring System (home office and field)

References

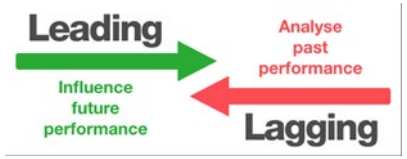
- Research Summary 12-1, *Project Objective Setting*, Second Edition
- Research Summary 6-1, *Project Control for Engineering*
- Research Summary 6-5, *Project Control for Construction*
- Implementation Resource 107-2, *Continuous Assessment of Project Performance*

Leading Indicators – impact on safety



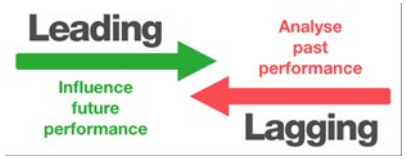
No.	Leading Indicators	Weight
19	The project is not following the requirements of a project specific safety plan during construction.	79
17	Potential safety related problems are not being resolved in a timely manner.	69
14	The project is experiencing a high level of safety incidents.	65
16	The project team personnel lack involvement in safety inspections, awareness of safety issues, and education in safety practices.	58
18	The project is experiencing an increasing level of worker non compliance in safety practices.	43

Leading Indicators – impact on quality



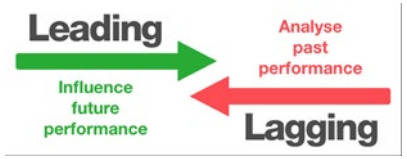
No.	Leading Indicators	Weight
12	A project specific quality plan is not consistent with the contract documents (plans and specifications).	41
1	The project team is lacking in the necessary expertise, experience, breadth, and depth to successfully execute the project.	40
32	The project is frequently asking vendors, suppliers, service providers, and contractors to perform functions outside their areas of expertise and experience.	38
13	The project fails to follow the quality plan for construction in relation to the roles and requirements of those who are responsible for that plan.	37
23	The level of maintenance and reliability personnel involvement in detailed design is low and the personnel lack alignment with other project team personnel with respect to maintenance issues for the facility.	36

Leading Indicators – impact on schedule



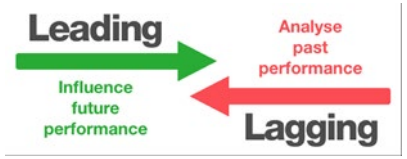
No.	Leading Indicators	Weight
5	Project milestones are not being met and are consequently jeopardizing future project milestones.	42
22	The project lacks sufficient staff, bulk materials, small tools, and construction equipment to adequately support planned construction activities.	39
37	Actual schedule activities are lagging behind planned scheduled activities over several reporting periods.	37
1	The project team is lacking in the necessary expertise, experience, breadth, and depth to successfully execute the project.	36
31	The project is experiencing difficulties in integrating schedules between project participants.	34
9	Significant project scope items are inadvertently omitted from bid packages.	34
4	The project team is losing confidence in the accuracy and validity of the schedule.	34

Leading Indicators – impact on cost



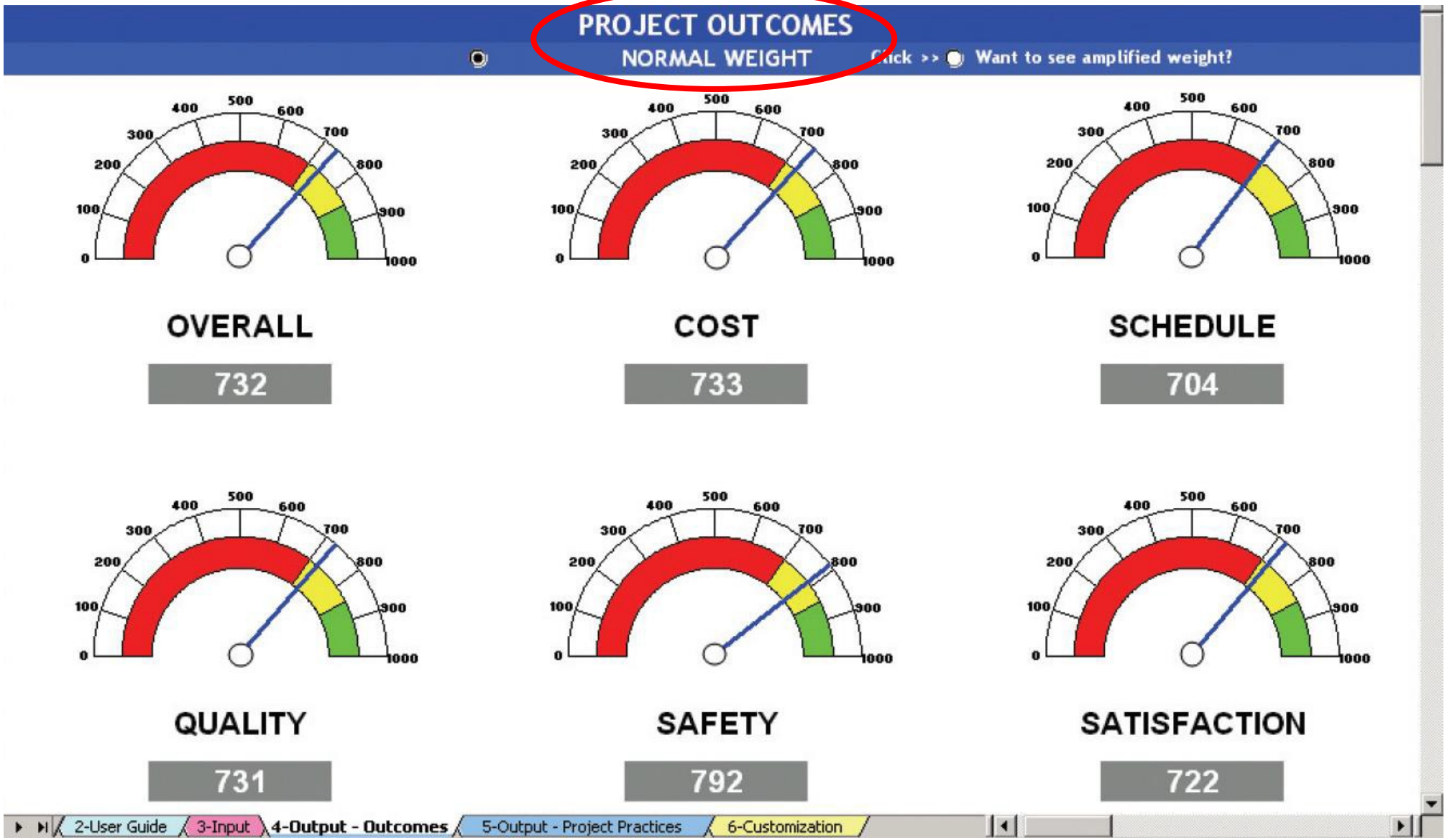
No.	Leading Indicators	Weight
38	Forecasts-to-complete based on actual project experience, actual commitments, and actual expenditures are projecting overruns.	42
42	Material and/or equipment prices are increasing rapidly for certain types of materials/equipment that represent a high percent of the project cost.	39
9	Significant project scope items are inadvertently omitted from bid packages.	39
11	The project is experiencing a high level of engineering/design/specification errors and scope changes.	38
28	Project changes are not being processed in a timely manner for decision making (includes defining cost and mark-up rates, evaluating schedule impact, obtaining appropriate approval authority, and initiating dispute resolution procedures).	35

Leading Indicators – impact on stakeholder satisfaction



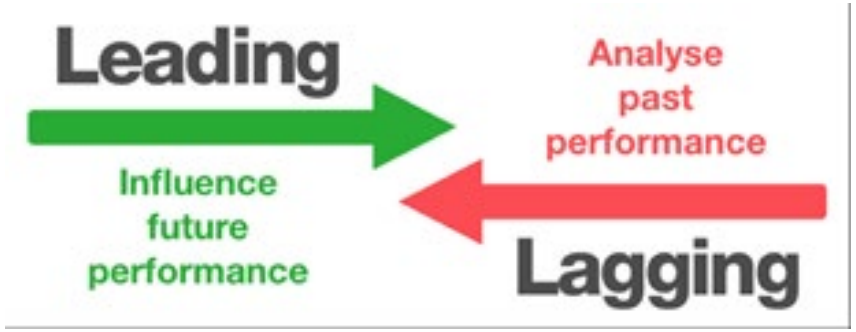
No.	Leading Indicators	Weight
1	The project team is lacking in the necessary expertise, experience, breadth, and depth to successfully execute the project.	35
34	The project team is not being realistic and truthful when project circumstances are unfavorable.	29
5	Project milestones are not being met and are consequently jeopardizing future project milestones.	28
4	The project team is losing confidence in the accuracy and validity of the schedule.	27
28	Project changes are not being processed in a timely manner for decision making (includes defining cost and mark-up rates, evaluating schedule impact, obtaining appropriate approval authority, and initiating dispute resolution procedures).	27

Project Health Indicator – output

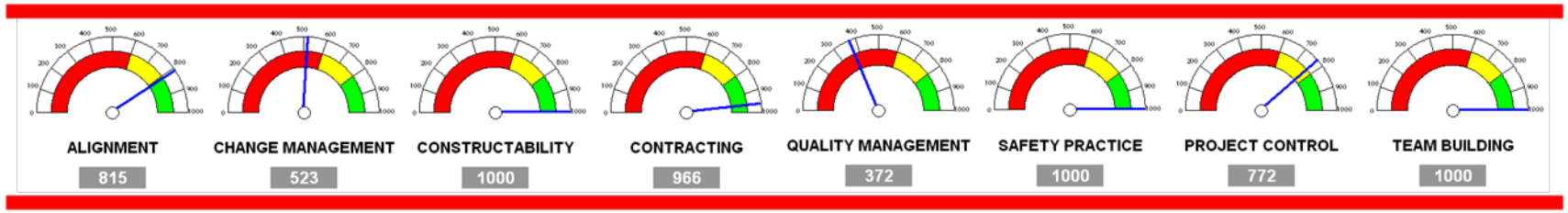


Project Health Indicator – output

Summary



- Easy to use, customizable tool
- Quantifies qualitative measurement
- Supplements traditional measures
- Predictive of risks and systemic process deficiencies by Project Outcome and Project Practice Area
- Results statistically correlated
- Project or executive level use
- Trends over time

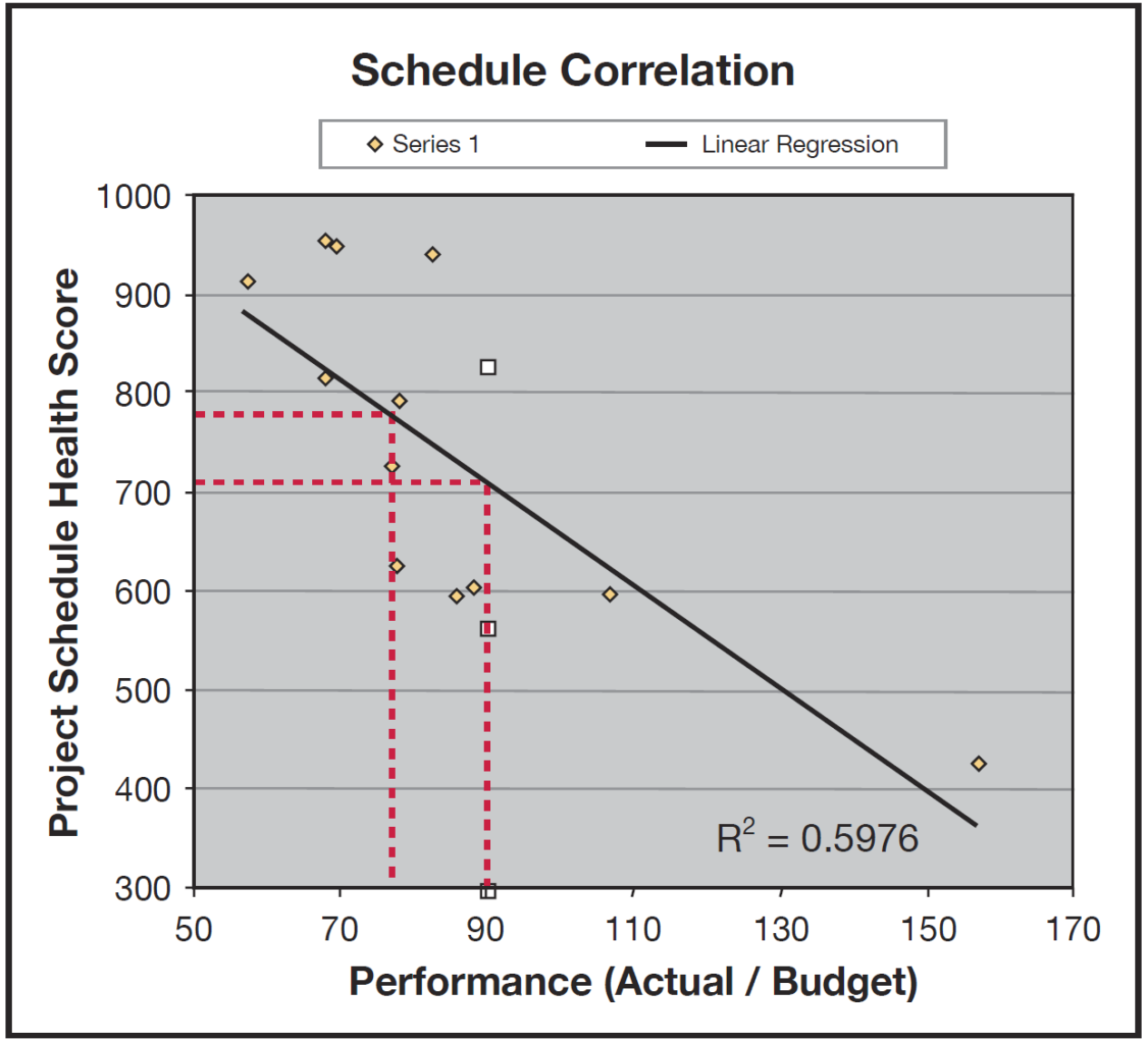


Q&A

Thank you very much!

- General comments: Communications@cii.utexas.edu
- Specific questions: Mike.Pappas@cii.utexas.edu
  GSepe@epm.cc

PHI vs Schedule Performance



PHI vs Cost Performance