The Language of Metrics: How FMs Measure Success
Written by: Dean Kashiwagi, PhD, PE, IFMA Fellow

Facility managers (FM) have had a difficult time in recent years. The job of maintaining and improving a facility has become complicated as owners' requirements have increased, the competitive worldwide marketplace has resulted in cost cutting, and facility management is usually not a core expertise of the building owner/organization. FM is identified as a cost which can be commoditized and outsourced.

Adding to the problem is a large percentage of FMs are near the twilight of their career with retirement in the horizon. The replacement of these FMs, many who have had 30+ years of experience and knowledge through the ranks of building services. IFMA identified finding the next generation of FMs is the largest challenge in the FM community.

The expectation is for the FM to be an expert in every facet of Facility Management. The FM is responsible for delivering services and construction (both new and modification work). The FM is expected to be an expert in the latest technology (sustainability, green, environmentally friendly, longer lasting materials or systems). Certifications, increased education requirements and becoming experts in areas that there is limited information increases the stress level of FMs. The rapidly expanding technology and products create a complex and confusing environment, one where marketing and promises of performance far exceed proven performance. This non-transparent environment has led to the low-bid culture in the FM industry, which is not benefitting any of the stakeholders.

Another challenge facing the FM industry is that the FM is not seen as a "core expertise" from the building owners' perspective. It is viewed as a cost, and many owners have outsourced the FM function to minimize their costs. The problem is that the same people doing the FM function for the organization are now working for the outsourced FM Company. There are no changes since the outsourced FM is expected to provide the same service for an even lower price. Outsourcing is not the solution it's changing the way the FM function is done.

There is no magic. The outsourced service must reduce the delivered value. The outsourced FM is now thinking "survivability" and is no longer capable of acting in the best interest of the organization that is utilizing their outsourced service. Everything is now looked at as a cost, with the lowest cost being the most desirable. The environment turns into a price-based environment, where risk is minimized through management, direction and control (MDC). Expertise is no longer utilized. Even though the MDC environment results in higher costs and lower quality because it is an inefficient practice, the environment is "complicated" to the extent that no one knows, "what is the *best value* for the lowest price?" or "what is the *actual* price and value?"

The FM is now trying to increase the "value" and professionalism of the FM. Several approaches have been utilized:

1. Create minimum standards.
2. To continually increase their education.
3. Network to create professional organizations and relationships.

FMs have seen the following in their industry:

1. Many FMs are in transition between jobs.
2. FM services are being outsourced.
3. FM professionals are being asked to do more with less compensation.
4. IFMA chapters are having more vendor members leading the chapters instead of FM professionals.
5. IFMA chapters are finding it more difficult to get FM professionals to participate.
6. FM internships are not easily obtained.

Possible predictions that the following will happen in the next ten years:

1. The current FM jobs will be changed into FM jobs that have a different requirement. FMs of the future will be forced to dominantly improve value and cut costs.
2. The successful FMs will have to have the ear of the "C-suite" or corporate decision-makers.
3. FM jobs that do not change to create dominant value will be outsourced, and the outsourced FM services will be involved in a "cut-throat" low-dollar environment where professionalism is minimized and administration work is maximized.
4. Potential future FM professionals will have a new approach. They will have to simplify, utilize expertise of the entire supply chain, create transparency for all stakeholders, improve quality and owner technical core competency capability and have a much greater span of control over the FM services.

Research to Meet Future FM Requirements

The latest research direction is to meet the futuristic conditions of the successful FM of the Future. The research includes the education of the early development of future successful FMs in high school and college, the development of the "FM Robot," which will utilize metrics to minimize cost and improve quality, the language of metrics, which the FM Robot will process, and the simplistic language of metrics that the FM will utilize to communicate to the owners' "C-suite".

<u>FM Assistant Computer/Robot</u>

The FM Robot has the following objectives:

1. Assist the FM to show dominant value.
2. Assist the FM to use the language of metrics.
3. Assist the FM to identify and utilize the expertise of the entire supply chain.
4. Minimize the need for the FM to know of all the information and make decisions by providing a system of metrics that will identify the most optimal FM solutions.

The operating instructions of the FM Robot will include the implementation of the following:

1. Every option and decision for an FM is made utilizing the language of metrics.
2. The FM Robot will take the metrics from the FM and identify the most successful action.
3. The FM Robot does not recognize relationships. It just identifies the best solution for the lowest cost.
4. The FM Robot forces each stakeholder to identify their performance in terms of metrics.
5. The FM Robot assists the FM to be a leader of the supply chains servicing the owner and can lead any type of service area.

The FM Robot is an assistant to the FM. The more the FM understands what the FM robot can do, the more the Robot will be utilized. The FM Robot is not completely automated to operate independently of the FM. The Robot still needs the FM to translate all actions to metrics. The Robot will have the following impact on the FM:

1. The FM's language will be simpler. The "C-suite" will not have any issues understanding value, performance and minimized cost.
2. The FM will utilize the language of metrics to communicate with everyone in the supply chain. Each stakeholder, each option, each proposal will have a performance line that every stakeholder can understand.
3. The FM will become transparent; regardless of the organization of the stakeholder, they will understand the vision and direction of the FM, and vice versa.
4. All stakeholders will be more accountable for their responsibilities, minimizing the problems of the FM.
5. Communications will be minimized between all stakeholders. This includes meetings, inspections, emails and documentation due to the increased transparency.

At the heart of the Robot usage is the “language of metrics.” At this time, the Robot does not speak or receive conversation. It only receives and delivers metrics.

Understanding the Language of Metrics

The language of metrics simplifies communications. It creates transparency. Metrics means numbers. To utilize the Robot, the FM must understand simple processes and use the language of metrics. The Robot will simply look for metrics to identify:

1. Expertise.
2. A specific vendor capability.
3. Simple reports that utilize metrics showing time, cost, customer satisfaction and project deviations.
4. The Robot has no mercy, no judgement, and no relationships but utilizes simple metrics to show the overall performance of all stakeholders.
5. The Robot also provides metrics that quickly end discussions on blame, errors, performance and problems.

The Robot output gives the FM metrics that will not require the “C-suite” to think or make decisions. The owner will simply take the recommendation of the FM and will increase the FM’s role in the organization due to the FM’s ability to optimize operations. Case studies of the Robot (metric) output includes:

1. The performance of the Information Technology (IT) vendor.
2. The performance of the metrics in the optimization of the environmental quality consultant work.
3. The value of one contractor over another for the City Convention Center addition.

Case Study 1:

The IT vendor was hired to optimize the University’s networking services. After three years, new management was accusing the vendor of having very poor performance. They decided to examine the performance metrics of the vendor. The metrics are shown below in Table 1 and 2. In Table 1, it shows that the overall cost to the university had been reduced by $2.8M per year. In Table 2, it shows that the Network downtime also had been reduced by the vendor from 99.802 (two days per year) to 99.998 (less than 40 minutes per year). It also shows that the University was spending less than 6% of their own funding on new systems/equipment. At the time of the disagreement over performance, the vendor was spending 56% of the funding on new systems/equipment. Through all the adjustments, the customer satisfaction of internet services increased from 3.6 to 3.8. The metrics stopped the client from using their bias. The university quickly realized that the vendor was an expert, and signed another five years’ service contract.

Table 1 – IT Networking Services: Cost

Business Outcomes	Pre Metrics	Metrics (2010)	Metrics (2013)
MSA Baseline	$12.29M	$10.81M	$11.96M
Growth – Out of Scope	N/A	N/A	$1.15M
Value Add	N/A	$0.43M/yr	$0.98M/yr
Net MSA	$12.29M	$10.38M	$9.83M

Table 2 – IT Networking Services: Performance

Business Outcomes	Pre Metrics	Metrics (2010)	Metrics (2013)
# of Major Outages	N/K	37	11
% Uptime	99.802	99.989	99.998
IT Spending Ratio	6/94 (new vs. maintenance)	26/74 (new vs. maintenance)	56/44 (new vs. maintenance) Includes new growth Includes Wireless-n
Customer Satisfaction	3.6/4	3.7/4	3.8/4

Case Study 2:
This study comes from one of the state offices. In the three tables below, the Best Value environment that was being controlled by metrics shows the dominant increase in performance. There are three examples: creating an Indefinite delivery, Indefinite Quantity (IDIQ) list of contractors, comparing the performance of the project managers under the traditional PM approach vs. the best value approach, and the comparison of two similar projects done using the traditional and the best value transparent approach using metrics. In the Tables below (4, 5 and 6) show that the transparent environment when using metrics it was dominantly better than the traditional environment. One objective of the metrics and transparency is that the results are so dominantly better, that no decision making is required.

Table 4: State Project Management Services: Creating an Indefinite Delivery

Criteria	% Diff	Traditional	Best Value (Metrics)
Required time to evaluate proposals	-95%	286 hrs.	13 hrs.
Protests	0%	0	0
Avg. Customer Satisfaction of process (1-10)	63%	5	9
Administration Cost	-96%	$98,520.00	$ 3,840.00
Admin. Cost Savings	**$ 94,680.00**		

Table 5: State Project Management Services: IDIQ Contract Traditional vs. Best Value (metrics)

No.	Criteria	Traditional	Best Value
1	Total # of projects	69	60
2	Total cost of projects	$5.5M	$5.6M
3	% of projects SOW completed in fiscal year	50%	97%
4	# of ADEQ PMs to manage projects	7	5
5	Customer satisfaction of vendor performance	6.9/10	8.4/10

Table 6: State Project Management Services: Traditional project vs. Best Value project

ADEQ PM Criteria	Traditional (Non-Metrics)	Best Value (Metrics)
Total Cost of Projects	$400K	$138K
Project Duration (days)	730	366
% Total Schedule Deviation	150%	26%
% Schedule Deviation Due to State	-	23%
% Schedule Deviation Due to Vendor	-	0%
% Cost deviation	300%	0.5%*
% of Milestone Deliverables Requiring State Revisions	100%	0%
% of Time Required by State to Support the Vendor	50% FTE	15% FTE
Overall Client Satisfaction	3/10	7/10

Case Study 3:
This study is from a City Convention Center addition. Four contractors responded. The top rated contractor (Firm A) was $5M more expensive then Firm D (see Table 7 below). The City selected the lowest price contractor (Firm D) saving $5M (or almost 10% of the project cost). Firm D won the competition because they were actually a best value contractor with the following practices:

1. Approximately 5% cheaper on all projects with the top performance (based on case studies).
2. Analyzed the construction methods to reduce the construction cost.
3. Look for high performance options that had lower prices.
4. Minimized the overhead cost on the project by buying the major materials directly.
5. Partnered with contractors from the very beginning of the bidding to minimize project cost.
6. Partnered with more sub vendors to eliminate overhead costs to the owner.
7. Utilized higher costing project manager to set up the project, but then planned to use lower costing project managers once all the preplanning had been done.

Currently the project is half completed, and the awarded contractor is below cost and within schedule. The contractor is continually reporting their project status by using a weekly risk report (performance metrics/robot readable) that simplifies the status of the project.

Table 7: City Convention Center

	CRITERIA & WEIGHTS		RAW DATA		PRIORITIZED DATA	
NO	CRITERIA	WEIGHTS	FIRM A	FIRM D	FIRM A	FIRM D
1	Cost	250	$ 65,605,923	$ 60,394,872	230	250
2	Risk Assessment	225	7.9	8.4	212	215
3	Value Assessment	175	8.8	8.6	172	164
4	Interviews	350	8.2	7.6	350	324
		1,000				
				Price Points (250):	23%	25%
				Performance Points (750):	73%	70%
				TOTAL POINTS (1,000):	*96%*	*95%*

In conclusion, the “FM of the Future” will change from the traditional FM to a FM who utilizes a metric-processing robot. The assistant Robot will minimize the risk of the FM by minimizing both thinking and decision-making. The use of the robot will slash project cost, project time, track deviations, and create an environment of transparency. The key component of the Robot is the “language of metrics.” This technology has been developed over 24 years and is now suggesting that FM of the Future will have a different language (simple and non-technical using metrics). The future FM will not be bogged down by technical language and will deliver outstanding performance (low cost and high value). The future FM will have a larger span of control including anything involved with the building and organizational operations, and be able to concentrate her/his efforts on utilizing expertise and taking care of the stakeholders. For more information on accessing the future FM technology at Arizona State University, please contact our office at (480) 965-1252 or pbsrg.com.