

# DSM Data Tracking Systems

Utility insights on selection & implementation



**E Source**

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Chicago, IL

# POWERING WHAT'S NEXT



## Who we are

A research and consulting firm focused exclusively on utilities and their customers



## Clients

We work with over 300 utilities and their partners



## Founded

Founded in 1986, we've been in the industry for over 30 years



## Headquartered

Boulder, CO

# Presentation outline

## **The journey of DSM tracking systems**

Tracking system platforms

How to succeed with system selection & implementation

- Know (exactly) what you want
- Secure organizational buy-in
- Collaborate with IT
- Consider ICs and TAs

# The journey of DSM tracking systems



Started with internal solutions driven by necessity

Growth in number and types of DSM programs

Evolving regulatory and data complexity

Additional layering of IT Systems

# The status quo

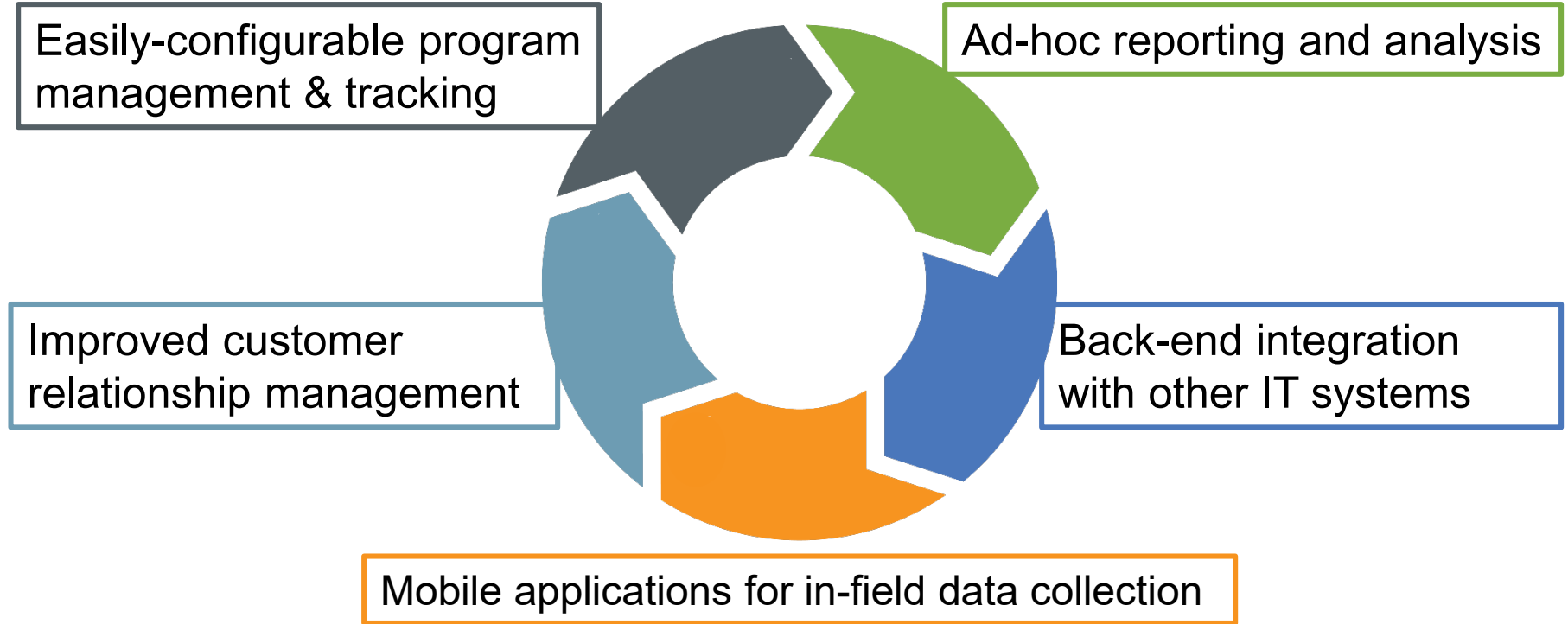
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
1	Click to Drill	MarketSector	PYEnd	Reporting Type	Net   Gross	Actual Impacts	\$ Spending	\$ per Actual	Impacts as % of Spending	as % of Actual	\$ Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	Impact %   Spending	
2	PGE21017 - Boiler Efficiency Program	Program Reported (ex ante)	740,224	\$805,932	\$0	17.19%	97%	178.13	864	\$637,482	\$737.83	27.42%	298%	\$	91.91	8,970	\$145,229	\$16.19	21.62%	538%
3	PGE21017 - Boiler Efficiency Program	Program Reported (ex ante)	1,346,491	\$805,932	\$0	16.58%	97%	171.82	562	\$637,482	\$1,134.31	24.22%	298%	\$	81.17	29,894	\$31,151	\$1.04	920%	57%
4	Energy Codes and Standards	Program Reported (ex ante)	10,086,000	\$3,057	\$0.00	77%	2%	43.66	491	\$843,486	\$1,717.89	19.331%	248%	\$	77.88	435,000	\$2,348,722	\$5.40	303%	40%
5	SCE-SW-004C - Agriculture Deemed Energy Efficiency	Program Reported (ex ante)	1,802,597	\$637,482	\$0.35	12.950%	296%	43.39	755	\$843,486	\$1,117.20	19.309%	248%	\$	77.79	725,000	\$2,348,722	\$3.24	303%	40%
6	SCE-SW-004C - Agriculture Deemed Energy Efficiency	Program Reported (ex ante)	1,173,279	\$637,482	\$0.54	11.429%	296%	38.30	2,250	\$3,057	\$1.36	112%	2%	\$	63.60	282,370	\$142,359	\$0.50	748%	129%
7	Water heating	Program Reported (ex ante)	12,000	\$1,000	\$0.08	71%	3%	21.20	182	\$335,672	\$1,848.32	18.161%	359%	\$	50.57	1,047,534	\$4,727,014	\$0.42	422%	74%
8	Energy Information Services Program	Program Reported (ex ante)	2,709,000	\$137,594	\$0.05	3.225%	155%	20.77	90	\$805,932	\$2,269%	97%		\$	23.78	584,766	\$4,727,014	\$0.67	419%	74%
9	C&I Demand Response	Program Reported (ex ante)	4,212,000	\$21,303	\$0.01	117%	6%	20.59	163	\$805,932	\$2,283%	97%		\$	23.64	24,840	\$49,063	\$1.98	854%	180%
10	Residential Low-Income Program (WARM Plus)	Program Reported (ex ante)	109,850,000	\$3,496,000	\$0.03	1,517%	83%	18.30	55	\$638,764	\$11,613.89	2,218%	115%	\$	19.27	9,330	\$4,273	\$0.46	103%	23%
11	SCE-L-004U - Western Riverside Energy Leader Partner	Program Reported (ex ante)	1,811,545	\$1,163,227	\$0.64	1,606%	102%	15.79	239	\$46,820	\$195.90	39%	2%	\$	19.07	13,917	\$105,111	\$7.55	362%	84%
12	Nonresidential Low Income	Program Reported (ex ante)	558,518	\$335,672	\$0.60	5,655%	359%	15.75	155	\$46,820	\$302.06	38%	2%	\$	18.69	428,440	\$517,887	\$1.21	895%	231%
13	SCE-L-004U - Western Riverside Energy Leader Partner	Program Reported (ex ante)	2,777,529	\$1,163,227	\$0.42	1,600%	102%	15.74	75	\$638,764	\$8,516.85	1,816%	115%	\$	15.78	1,566,070	\$1,435,247	\$0.92	181%	53%
14	Multifamily	Program Reported (ex ante)	1,924,000	\$342,070	\$0.34	334%	31%	10.68	542	\$343,000	\$632.84	352%	28%	\$	12.52	98,792	\$1,182,842	\$0.42	222%	67%
15	PGE21003 - Multifamily Energy Efficiency Rebates Program	Program Reported (ex ante)	1,776,326	\$126,806	\$0.72	187%	18%	10.62	34	\$64,439	\$16,601.15	2,252%	194%	\$	11.58	20,000	\$217,115	\$10.86	164%	49%
16	SCE-L-004P - San Joaquin Valley Energy Leader Partner	Program Reported (ex ante)	4,198,304	\$843,486	\$0.20	2,551%	248%	10.28	47	\$64,439	\$12,009.34	2,070%	194%	\$	10.65	59,181	\$1,182,842	\$0.46	221%	67%
17	SCE-L-004P - San Joaquin Valley Energy Leader Partner	Program Reported (ex ante)	6,458,929	\$843,486	\$0.13	2,551%	248%	10.28	188	\$287,196	\$1,527.64	895%	86%	\$	10.45	867,426	\$1,348,550	\$1.55	298%	90%
18	PGE21003 - Multifamily Energy Efficiency Rebates Program	Program Reported (ex ante)	273,347	\$126,806	\$0.46	181%	18%	10.28	81	\$756,071	\$9,334.21	1,033%	102%	\$	10.11	1,332,479	\$1,348,550	\$1.01	297%	90%
19	Energy Codes & Standards Enhancement	Program Reported (ex ante)	3,330,000	\$2,852	\$0.00	84%	8%	10.02	3,378	\$2,248,700	\$665.69	845%	90%	\$	9.39	3,268	\$87,891	\$2.73	239%	75%
20	Multifamily	Program Reported (ex ante)	1,526,000	\$342,070	\$0.29	295%	31%	9.41	3,378	\$2,248,700	\$665.69	840%	90%	\$	9.34	1,948	\$87,891	\$2.98	238%	75%
21	PGE211019 - San Mateo County	Program Reported (ex ante)	9,286,085	\$1,822,151	\$0.20	733%	80%	9.22	113	\$756,071	\$6,690.89	914%	102%	\$	8.94	132,286	\$734,517	\$5.55	77%	24%
22	SCE-TP-017 - Comprehensive Chemical Products	Program Reported (ex ante)	1,370,362	\$46,820	\$0.03	18%	2%	8.59	648	\$192,259	\$296.70	810%	99%	\$	8.19	1,980,503	\$1,322,088	\$0.70	266%	86%
23	PGE211019 - San Mateo County	Program Reported (ex ante)	13,786,996	\$1,822,151	\$0.13	679%	80%	8.53	2,139	\$3,270,712	\$1,529.27	1,398%	173%	\$	8.06	180,062	\$734,517	\$4.08	75%	24%
24	SCE-TP-017 - Comprehensive Chemical Products	Program Reported (ex ante)	890,735	\$46,820	\$0.05	17%	2%	8.48	551	\$192,259	\$348.93	765%	99%	\$	7.74	13,189	\$70,832	\$5.37	784%	285%
25	SCE-13-L-002W San Bernardino Regional Energy Leader	Program Reported (ex ante)	2,376,649	\$1,435,292	\$0.60	1,145%	145%	7.92	330,000	\$6,962,746	\$21.10	116%	15%	\$	7.73	131,266	\$879,432	\$6.70	130%	47%
26	SCE-13-L-002W San Bernardino Regional Energy Leader	Program Reported (ex ante)	3,649,622	\$1,435,292	\$0.39	1,143%	145%	7.90	330,000	\$6,962,746	\$21.10	116%	15%	\$	7.73	198,216	\$2,725,417	\$7.17	125%	48%
27	Strategic Energy Management	Program Reported (ex ante)	11,735,000	\$529,000	\$0.05	469%	63%	7.42	741	\$657,152	\$886.84	541%	71%	\$	7.67	42,730	\$125,000	\$2.93	117%	47%
28	SCE-L-004 - Desert Cities Energy Leader Partnership	Program Reported (ex ante)	584,809	\$254,142	\$0.43	817%	118%	6.91	31	\$93,263	\$3,024.50	3,084%	405%	\$	7.61	63,643	\$31,960	\$0.50	50%	20%
29	SCE-L-004 - Desert Cities Energy Leader Partnership	Program Reported (ex ante)	892,963	\$254,142	\$0.28	811%	118%	6.86	6,300	\$3,800,000	\$603.17	1,575%	211%	\$	7.46	282,657	\$2,725,417	\$1.46	120%	48%
30	SDGE3213 - SW-CALS - CAHP/ESMH-CA Advanced HI	Program Reported (ex ante)	729,941	\$2,417,436	\$0.10	410%	66%	6.23	66	\$357,462	\$5,275.91	575%	83%	\$	6.92	783,069	\$3,535,239	\$2.46	101%	101%
31	SDGE3213 - SW-CALS - CAHP/ESMH-CA Advanced HI	Program Reported (ex ante)	437,964	\$2,417,436	\$0.10	410%	66%	6.23	411	\$657,152	\$1,598.91	488%	71%	\$	6.92	238,130	\$267,912	\$1.13	209%	87%
32	LED Streetlighting	Program Reported (ex ante)	4,497,000	\$1,194,000	\$0.27	83%	15%	5.55	129	\$1,182,842	\$9,144.11	441%	67%	\$	6.61	275,753	\$1,221,273	\$4.43	811%	346%
33	Agriculture	Program Reported (ex ante)	204,551	\$93,263	\$0.46	2,079%	405%	5.13	200	\$1,182,842	\$5,864.71	428%	67%	\$	6.42	281,150	\$8,027,964	\$2.77	196%	84%
34	EE Communities / Behavioral Pilot	Program Reported (ex ante)	3,396,216	\$272,688	\$0.02	75%	15%	5.03	46	\$357,462	\$7,777.43	459%	83%	\$	5.53	52,990	\$125,466	\$2.37	232%	103%
35	SCE-TP-023 - Cool Schools	Program Reported (ex ante)	1,158,063	\$290,213	\$0.25	256%	59%	4.36	120	\$39,341	\$327.84	92%	18%	\$	5.09	210,890	\$662,269	\$3.14	172%	77%
36	SDGE3211 - Local-CALS - Middle Income Direct Install	Program Reported (ex ante)	227,090	\$357,462	\$0.09	359%	83%	4.32	2,590	\$13,336,156	\$5,149.00	480%	103%	\$	4.67	29,146	\$178,095	\$6.13	890%	398%
37	SCE-TP-023 - Cool Schools	Program Reported (ex ante)	1,299,074	\$290,213	\$0.22	244%	59%	4.15	155	\$274,675	\$1,772.10	63%	14%	\$	4.52	137,510	\$228,314	\$1.66	270%	123%
38	Combined Heat and Power	Program Reported (ex ante)	24,208,000	\$949,048	\$0.99	99%	24%	4.15	107	\$2,163,472	\$20,219.36	832%	185%	\$	4.49	115,345	\$420,522	\$3.65	65%	31%
39	Combined Heat and Power	Program Reported (ex ante)	24,208,000	\$949,048	\$0.99	99%	24%	4.15	64,500	\$612,448	\$9.50	133%	30%	\$	4.46	13,503	\$86,002	\$6.37	42%	20%
40	SDGE3245 - SW-Lighting-Primary Lighting	Program Reported (ex ante)	149,103,152	\$28,557,356	\$0.28	386%	95%	4.06	181	\$342,070	\$1,895.41	137%	31%	\$	4.38	36,293	\$27,964	\$0.77	127%	60%
41	Nonresidential Multifamily	Program Reported (ex ante)	2,740,160	\$766,149	\$0.28	108%	27%	4.04	3,263	\$949,048	\$2,847.41	105%	24%	\$	4.38	405,580	\$480,193	\$1.18	165%	81%
42	Government & Institutional Program	Program Reported (ex ante)	5,489,000	\$470,000	\$0.09	512%	135%	3.78	3,263	\$949,048	\$2,847.41	105%	24%	\$	4.38	541,013	\$2,296,063	\$4.25	188%	93%
43	SDGE3211 - Local-CALS - Middle Income Direct Install	Program Reported (ex ante)	174,242	\$357,462	\$0.13	313%	83%	3.77	339	\$1,183,580	\$3,491.39	469%	111%	\$	4.23	174,313	\$9,027,964	\$5.19	169%	84%
44	Residential Behavioral Savings	Program Reported (ex ante)	6,536,000	\$143,000	\$0.02	135%	36%	3.76	8,393	\$20,287,166	\$2,417.15	335%	80%	\$	4.18	365,990	\$240,030	\$0.66	174%	77%
45	C&I Demand Response - Direct Load Control	Program Reported (ex ante)	20,445,000	\$539,623	\$0.03	108%	20%	3.50	717	\$6,603,393	\$9,348.38	411%	60%	\$	4.15	62,450	\$463,024	\$7.42	174%	86%

# DSM tracking system platforms



# The ideal outcomes





# How to succeed with selection & implementation



1. Know (exactly) what you want



2. Secure organizational buy-in



3. Collaborate with IT



4. Consider ICs and TAs





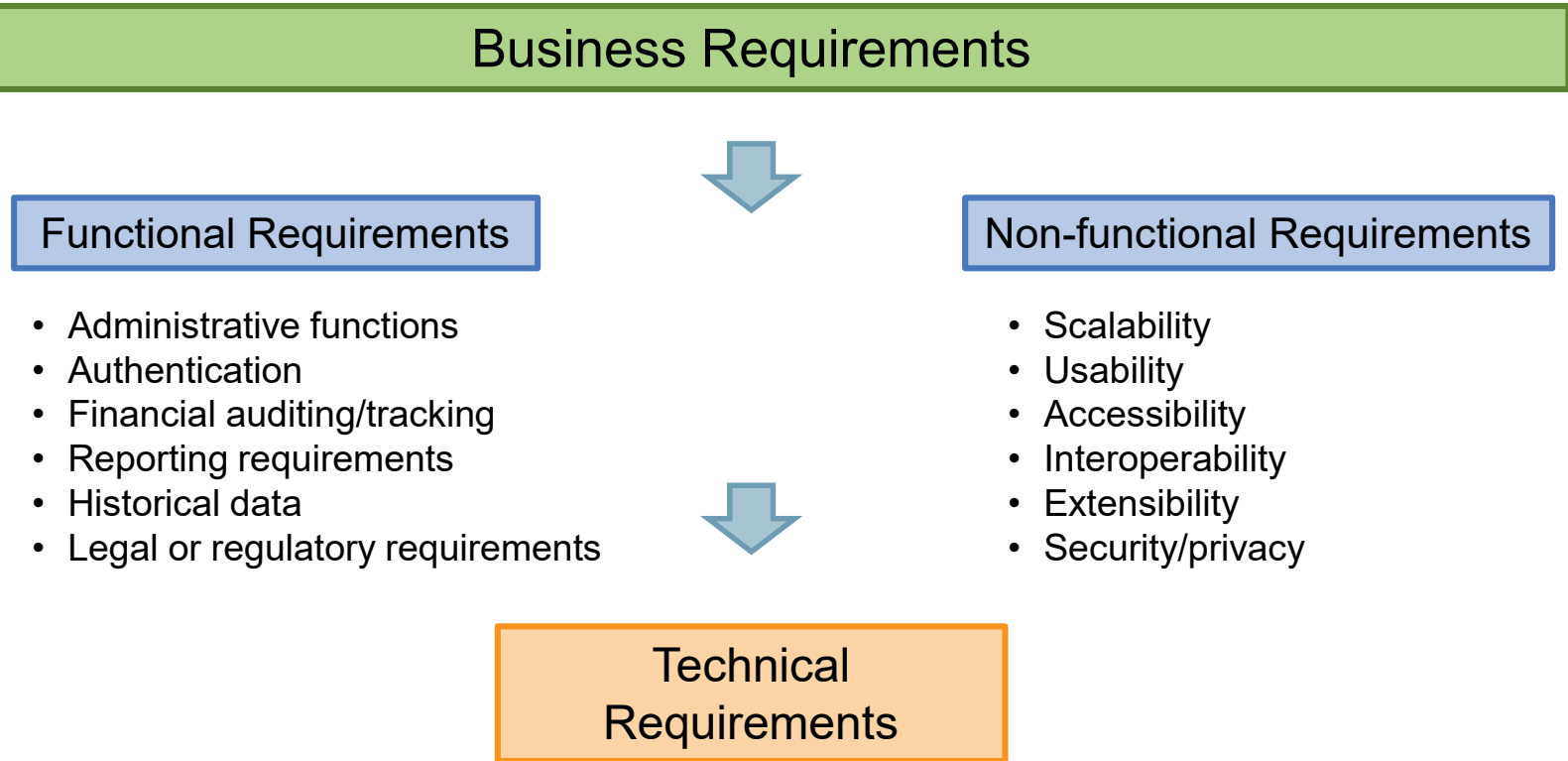
# 1. Know (exactly) what you want

“

*“The best advice I have is to know exactly what you’re looking for before it gets built... Have a concise vision of what you’re looking for it to do.”*

”

# 1. Know what you want (cont'd)



# 1. Know what you want (cont'd)

Business

Functional Requirements

- Administrative functions
- Authentication
- Financial auditing/tracking
- Reporting requirements
- Historical data
- Legal or regulatory requirements

60%

Avg. cost overrun on  
projects with poor  
requirements analysis

Functional Requirements

- Security
- Scalability
- Reliability
- Availability
- Maintainability
- Interoperability
- Privacy

Requirements

Source: *Business Analysis Benchmark 2009*, IAG Consulting

# 1. Know what you want (cont'd)

- 1 Helps vendors define scope and estimate costs
- 2 Lays foundation for determining project success
- 3 Reduces system implementation costs
- 4 Builds cohesive implementation strategy
- 5 Reduces re-work and minimizes maintenance
- 6 Manages expectations & reduces fallout
- 7 Faster rollouts & stronger performance

## 2. Secure organizational buy-in

“

*“You need constant communication with staff who are running programs and the management group. And If your executive team is not bought into doing it, it’s not going to happen.”*

”

## 2. Secure organizational buy-in (cont'd)

Transformational  
change

Resistance(s) to  
change at utilities



Executive buy-in with  
good communication

End goals elusive but  
important

### 3. Collaborate with IT

“

*“We’re limited in our ability to integrate a new system with existing ones and it’s primarily because of concerns from our IT department...”*

*... It’s really a utility problem more than a developer problem. Our system’s developers could do it, but at this point our IT department just won’t let us.”*

”



### 3. Collaborate with IT (cont'd)



DSM origins with IT necessities

Internal constraints & expectations

Well-placed privacy/security concerns

Robust vetting of potential vendors

IT support beyond system selection

## 4. Consider implementers & contractors

“

*“We’ve seen it take months as opposed to days or weeks. We have to deal with data configuration & validation, making sure that mapping files are correct, that project statuses are accurate, and that rounding of data records is consistent.”*

”

## 4. Consider implementers & contractors



Prevalence of implementers & contractors in DSM



Third-party data security, compatibility, and validation



Digital & human systems



Months vs. weeks vs. days



# The journey continues...



- Know (exactly) what you want
- Secure organizational buy-in
- Collaborate with IT
- Consider ICs and TAs
- Digital transformation(s)
- New data streams
- Adaptive program management
- Improved customer relationships

# Thank you! Questions?



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<https://bit.ly/2SAn6Sd>