STRATEGY – PRODUCT MANAGEMENT – PRODUCTION PLANNING - SUSTAINABILITY

AN ENGINEER'S PRACTICAL PERSPECTIVE

SYSTEMS - MY FIRST APPROACH + 40 YEARS AFTER

- I984 HYDRAULIC ENGINEERING
- CATANIA + STANFORD = WATER SYSTEMS
- SAN JOAQUIN VALLEY, CALIFORNIA + IRRIGATION = SALINITY
- Sustainability of irrigated agriculture in the SAN JOAQUIN VALLEY, California Hydrologic Sciences, Department of Land, Air, and Water Resources, University of California, Davis, May 2006:

"Approximately 113 thousand acres on the west side of the San Joaquin Valley have been retired (permanently removed from irrigation) due to regional drainage problems (high salinity, shallow groundwater). More land retirement is anticipated."

The Economic Impacts of CENTRAL VALLEY Salinity University of California Davis, Final Report to the State Water Resources Control Board Contract 05-417-150-0, March 20, 2009:

"If salinity increases at the current rate until 2030, the direct annual costs will range from \$1 billion to \$1.5 billion, with income impacts to the Central Valley between \$1.2 billion and \$2.2 billion."

CONSTRUCTION PROJECTS MANAGEMENT













GREEK MINISTRY OF INFRASTRUCTURE, TRANSPORT & NETWORKS

- > 10 General Divisions
- > 40 Engineering & Construction Divisions
- > Finance Divisions
- > 25 State-owned Companies

The external to the Ministry "players" (i.e. other Ministries, Contractors, Consultants)

ORGANIZATIONAL STRUCTURE COMPLEXITY



PRIME MINISTER'S OFFICE

- PM methodologies and tools had been adopted & a "Strategic" PMO had been established at Council of Ministers level, supporting Prime Minister's Office.
- Data of approx. 54.000 Public Contracts had been collected from 7.500 public offices and had been managed in a homogeneous and efficient way.
- Credible and timely reports, based on reliable data had been produced for the Prime Minister, the Council of Ministers as well for the totality of Public Organizations.
- Credibility gained at the Council of Ministers, despite the disputes created inside and outside the government.

RESULTS

- The personnel involved at all levels perceived the feeling that is part of an integrated work process.
- The top-down, bottom-up communication had become direct and precise.
- Became possible to evaluate each organization, sector, category of projects, etc. (portfolio/systems management).
- Transparency and efficiency in planning and execution of public contracts had been increased.
- Disputes on data reliability had been eliminated, reserving Cabinet's time for the discussion of broader strategic issues.

RESULTS

- Government Projects expenditure program could be continuously measured and monitored at an aggregate level.
- Supported Prime Minister's briefing on the handling of issues, increasing ministries coordination.
- Impartial and precise approach for the development of Council of Ministers forward agenda.
- Supported the legislative work of the government both in the law definition phase as well as in its application phase.
- The whole effort succeeded because of the personal commitment of the Prime Minister and the positioning of SPMO under his direct supervision.

PORTFOLIOS / SYSTEMS > COMPLEXITY!



PROJECTIZED/MATRIX ORGANIZATIONS



TOP DOWN APPROACH



PROJECT MANAGEMENT INFORMATION SYSTEM (PMIS)

Nervous System





PMIS SOFTWARE

ABILITY TO COLLECT & ELABORATE DATA ACCORDING TO **ORGANIZATION'S** SPECIFIC NEEDS

WE ANSWER POSITIVELY TO THE QUESTIONS:

- Can we utilize PMIS and Project Management methodologies for Internal Processes, Product Management, Demand Planning, Production planning, Marketing, ...?

- And what about the ANNUAL BUDGET and the STRATEGIC PLAN?

FROM STATIC TO DYNAMIC!

	1998-99	199	9-2000	Change in 1999-2000 actual								
		Budget		From 1998-99	From M	lay 999						
	Actual	estimate	Actual	actual	Budget e	stimate						
ncome Tax	\$m	\$m	\$m	\$m	\$m	%						
Individuals												
Gross pay-as-you-earn (a)	71 158	76 350	76 506	5 349	156	0.2						
Collections on assessments (b)	12 539	12 750	13 370	831	620	4.9						
Prescribed payments system (c)	2 790	2810	3 121	330	311	11.0						
Total refunds	10 311	11 930	10 946	634	-984	-8.2						
Total individuals (d)	76 176	79 980	82 050	5 875	2 070	2.6						
Companies	20 733	21 950	24 346	3 612	2 396	10.9						
Superannuation funds (e)	3 916	3 940	3 820	-97	-120	-3.1						
Withholding tax												
Non-resident												
Dividend	152	239	312	160	73	30.6						
Interest	546	570	552	6	-18	-3.1						
Royalties	380	370	351	-30	-19	-5.2						
Resident	140	130	212	71	82	62.7						
Mining	I	1	I	0	0	46.4						
Total withholding tax	1 220	1 3 1 0	I 428	208	118	9.0						
Resource rent tax	419	720	1 184	765	464	64.4						
Fringe benefits tax (f)	3 289	3 280	3 373	84	93	2.8						
Total Income Tax	105 752	111 180	116 200	10 448	5 0 2 0	4.5						
Sales Tax (g) (h)	15 155	15 450	15 523	368	73	0.5						
Excise (i)	13 608	14 300	14 108	500	-192	-1.3						
Diesel fuel rebate scheme (j)	-	1 620	1514	-	-106	-6.5						
Miscellaneous	11	0	0	-11	0	0.0						
Total	134 527	139 310	144 318	-	5 008	3.6						

Activity	Astrity	Orig Ren 1 Our Dur P	otal Early out Start	Early	MAY -	3 -4	AUG I	P OCT	NOV D	2 JAN	FER M	AR APR	MAY .	AUN JUL	10	36P 11	CT NO	V DEC	JAN	FEB M	AN AP	19	3.99 28	AL AU 21 2	38P 23	0CT NO 24 2
Stoted	Temporary 12" Water Main into L&T	4 4	360 NAPROS	15APR06		mana	a.c.u.u	ALT PLAN	1	TIO IN THE	and the second	M	and the second	or other states		and the	and the second		1.1.1	on the	and the second		LULL L	THE REAL		in which the
\$10200	Remove 12" Vister Man in New Rotal Area	2 2	350 14APR05	17APR06	1							157														
\$10210	New it' Water Main Along the East Side of CCD	10 10	350 18APR06	CRASA YOS	1							4	V													
tetail (Sur	nmary Activities)											1.1														
Existing M	all - Basement																									
_																										
E1050	Install Basemant Pump Stations	40 40	240-07544/806	DMAAYOS							100	-	v 1													
£1000	Inidat Water Line in Basers ent	50 50	340.07864/806	1586AY08							1.0	0.00	2													
€1010	Install Sanitary Line in Easement	50 50	340 X07MA/R08	15664.YOS	1						1															
E1020	Install Storm Line in Basement	50 50	360-07MAR06	15MAY08									100													
E1040	Install Force Mains	50 50	350-07MAR06	15A8AYO8	4	_		_	-		. 23		-								_					
E1050	Cut Over Water Lines	10 10	340 18848905	SOMAYOR									100													
E1000	Cut Over Spriters	10 10	340 COMATUS	SURSATUS SURSATUS	41.15								100													
Patal Area	Concrete Sectory	[10] 10]	240 30005798	130/06/100		-	7. 7.			-			10000		-		1.1	1			_	-	-	-	-	
Main Area																										
TANANUS					1																					
INSCOT	Test Plet - Main Anna	27 27	-17 2708:008	00#8508						-																
1810300	Pites - Marr Area	55 55	-26 1072 506	27A PH06	1						Activity	-														
1810000	Excevation - Main Area	7 7	37 2872 806	BORAMBO	1						150			-												
1510800	Site Grounding Retail Area 1	50 50	131 13MAR08	003/46.08	3						1	<u>.</u>	and the second second	- N.												
1510700	Cathodic Protection Retail Area 1	80 80	61 13MAR08	03401.08		_						-														
1810400	Pile Cap Condrete/Nebar	54 54	-26 17MAR06	01,4,4405	-							C			-											
1811000	Structural Steel - Main Area	00 00	-24 10MAYD6	808/U308	4								-													
1810100	Shed Pring - Man Area	20 20	3.02.4,1408	20009200	411								1.2	-												
1816200	Cost to Base Costate	20 20	20120000	1182/06	4. 12									-												
1811200	Ltat Concrete Floor File and Rebar - Man Avea	61 61	-36 (2.8.0.06	OSOCTOS									100	100	-											
1812800	Membrane Roofing - Main Alea	12 12	61 0440006	2140306	生日										0007	See.										
1813205	HVAC Distribution - Understate Main - Main Area	20 26	RS GAAUGOS	1155906	1										0	107										
1813305	Phundung Distribution - Understad - Main Area	28 26	63-04AU006	1156998	1										4	157										
1813400	Electrical Supply & Distrib - Understab - Main	20 26	63.04AUG08	115EP06	1										1	107										
1R13005	Fire Protection System - Understab - Main Area	20 20	83 04AUG06	115EP08											6	57										
1R11900	Internal CMU Walte - Main Area	67 67	65-04AUG08	2400108											1			1.00								
1R12900	Skylights - Main Area	90 90	-24104AUG06	1506005											1000			100								
1R12000	Exterior Entrances - Main Area	60 60	14 085EP06	04080005												A .										
\$R15200	Esterior Precast Walls - Mars Area	65. 00	a oasepos	1206006	-	_				_				_		24	÷								-	
1810000	Baddito Stati - Main Area	20 20	63 1258 PDG	0900106	4											-										
1K11200	Comparis Dath on Cranta - Main Area	20 20	-9-2256906	10940408	4											1.5	-									
1813501	Concrete Parthon Walts - Main Area	7 7	163 0500105	1600108	E 18											-	57									
1812100	Perthouse Well Louvers - Main Area	27 27	66 09OCT05	13NOV08	# E											1 3	-									
1812500	Colling Fire Doors - Main Area	33 33	164 0500706	21NOV08	1. 12		1. 1									1	-	V						1		
1812800	diPating Doors - Man Area	33 33	184 0900706	21NOV08	1 1											1	1	0								
1813700	Internal Drywall Partitions & Parit - Main Area	67 67	29.0806766	2606006	1 1											1		×								
1815400	Enterior Curtain Walls - Main Area	60 00	23 0600706	DOUANO?	1.											4		N 3	V							
1812700	Exting & Stairways - Man Area	60 60	130.0600706	03JAN07								_				1	-			100	_					
1812200	Elevators - Main Area	100. 100	150 080CT08	28FE607	-											6	-			- 1						
1812300	Escalators - Main Area	100 100	150 0800706	28FE807	4											1	10			- V	10					
1017210	Profile Contribution - Rough in - Man Area	100 100	106 10000108	13664,9657	-												10			-	1					
a Provide	Photosofy Monte Provent, Providence Mark	100 100	AND TRUCKING	13666900	4												A	-		-	E G					
1813410	Ere Posterbox Sustan - Rough in - Mark	100 100	106 1900/108	13668007	+	_	1							- 1 -			A		-	-		-			-	
1812400	Data Engineeral - Main Area	53 13	192 105404/06	3010008	1												1	107		-						
1811900	Door Frances & Handware - Main Area	30 30	155 149409/06	OSJANO7													100	1	17							
1811800	Demising Walts (Tenant to Finish) - Main Area	40 40	61 16NOV08	TéLANI07	1												3		W.							
1813100	Continion Area Finistee - Main Area	75 75	IN TRNOVOS	0944R07	1		1								18		4	-	-	- 7		1.1	1		1	1.14.1
-Des	11,8681			Stayte	CL(B)				-				netra	10]					-				- j.	Charles -	-	
RSDay	and the second se			Property has	11									1		_			-9000					04041	-	-mener
mDev.	MCRCAT IS AT			CHER AD	4			Cent	er Expa	ension				-					_			-	-			_
					1		Prot	liminary	Constra	action Sel	hedule			-									-			
					1			Contract Co	-		Sec.			-	-	_		-	_	_	-	-	-			
	THE PROPERTY & STATEMENTS, MAL				1.0										_								_			

PRODUCT/PROJECT LIFECYCLE - SUSTAINABILITY SYSTEMS & PORTFOLIOS









HOOVER DAM

CONSTRUCTION 1931 – TODAY's COST \$860 million (Bechtel) MAINTENANCE / DISMANTLING COSTS TODAY AT 40% RESERVOIR CAPACITY (DUE TO CLIMATE CHANGE?)

> IN USA 69 DAMS REMOVED IN 2020 A TOTAL OF 1,797 DAMS HAVE BEEN REMOVED SINCE 1912.



THANKYOU

PANAGIOTIS AGRAPIDIS

p.agrapidis@gmail.com

www.linkedin.com/in/agrapidis/