Journals & Periodicals Information

Pune Vidyarthi Griha's
COLLEGE OF SCIENCE
[Affiliated to the University of Pune Identification No. PUPN/SC/157/2001]
'Vidyanagari', S.No. 44, Parvati, Pune 411009.
■ Tel. No 020 24227484 / 020 24221484, Fax No. : 020 24221484
■ Email : pvgscos@yahoo.co.in Website : www.pvgcos.com

Ref. No :PVGCOS/38/LIB/02/2016-17
PVG/COS/LIB/02/16-17

DATE : 11/11/2016

To,
Seventh Sense Publication,
D-27, Royal shelter building, 3rd Floor,
7th Cross(East Street), Thillainagar,
Trichy- 620018,
INDIA

Subject : Subscription to "International Journal of Compurer Trends and Technology (IJCTT) for the year 2017.

Reference : Your's Journals Catalogue.

Respected Sir,

With reference to your Journal Catalogue our college wishes to subscribed "International Journal of Compurer Trends and Technology(IJCTT) for the year 2017.

The cash payment of Rs.6000/- is deposited in your current Account No. 009002000002011 in the name of "Seventh Sense Publication" on Trichi Branch from Sahakarnagar, Pune Brach of Indian Overseas Bank.

Please acknowledge the receipt.

Yours faithfully

(Mrs. S.D. Deshmukh)

I/c PRINCIPAL
P.V.G.'s College of Sc...
Vidyanagari,
Pune-411 0...

Encl : 1) Copy of Order form dully filled.
2) Photocopy of cash deposit receipt.

Principal
P.V.G.'s College of Science
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3.2.1 Institution has created an ecosystem for innovations including incubation centre and other initiatives for creation and transfer of knowledge

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The Librarian,
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Pune 09

Date: 25.10.2016 No.SP\2016\524 Order No. **RENEWAL**

Sr. No.	PARTICULARS	PRICE
	SUBSCRIPTION FOR THE YEAR 2017	
1.	Intl. Journal of Artificial Intelligence and Computational Research	Rs. 3000.00
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Wi-fi Access Document

Pune Vidyarthi Griha's
College of Engineering And Technology
S. No. 44, Vidyanagari, Parvati, Pune 411 009
Phone : 24228238, 24228265, 24228279

Department : Comp/IT/Administration.

To M/s IT Logic, Anyapratham, Apt. 2nd Floor, NDA Road, Warje, Pune-58

Your Quotation No. IL/QTO/16-17/00161 Dated : 04/10/16

Our Purchase Order No. COET/CIT/2016/09 Date : 04/10/2016

We are pleased to place the order with you for the supply of the following material. Please however, note the terms and conditions given below and overleaf for honouring this purchase order. Kindly confirm.

Sr No.	Description	Quantity	Unit	Rate per unit Rs.	Cost Amout Rs.
1	Wireless Accespoint 1600 mw 2.4GHz, Make : Alfa Network OR Microtech - With installation of 08 Accespoints at Vidyanagari Campus - Labeling, switches Power on Ethernet as per need at the time of Installation. - Testing Less discount - Support & Warranty for One year			03,00,000/- (Inclusive of all)	03,00,000/-
	Net Total Rs. Three Lac Only				03,00,000/-

Price Basis	Salex Tax	Excise duty at 80%	Other Levies
By Cheque	Nil / % aagainst declaration	-NIL-	Final amount include all taxes.

Payment Terms	Insurance, if any	Mode of transport
Advance with P.O	-Nil-	Door delivery & Installation

Delivery Schedule : Immediate

Handled by : Dr. Y.P. Nerkar.

Supplier 03/10/2016

For Pune Vidyarthi Griha's College of Engineering & Technology
Principal

Director 07/10/2016

P.V.G.'s College of Science Pune 411 009.

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PVG's College of Science, Pune – 9.

REGISTRATION FORM FOR Wi-Fi CONNECTIVITY
(For student use only)

Date 29-9-2018

Name : Atharva Anil Kavale

College PRN. No. : _____ Degree (UG/PG/) UG

Branch : Computer Science Class(FE/SE/TE/BE/ME) F.Y.

Department : Computer Science College Name: PVG's college of science

Mobile information: (Make) Vodafone IMEI NO: 869446033493635

Mobile Number: 9158972001

MAC Address of the system: 98-32-E3-3E-53-86

Ex: 04-AE-52-BB-5A-41

Students Current Address 9/A2, Vijaysheel Apt., near power hospital, Balajinagar, Pune-43

Address Proof :(Document name attached) Adhar-card

Email ID : Atharvakavale32@gmail.com

Parent's Residential Address 9/A2, vijaysheel Apt., near power hospital, balajinagar, pune-43

Address Proof:

Parent's Mobile No. : 8087539039

DECLARATION

The above mentioned system solely belongs to me. I commit that I will use this facility for Academic purpose only and I will not share my account with anybody.

1. I will not use this connection for any illegal activities which may affect the goodwill of the college.
2. I will not use this connection for any illegal activities which will affect the integrity of our nation.
3. I will be the only person using the computer/laptop with this MAC address for wireless connectivity and will not transfer it to another person without intimating the PVG's College of Science, Pune – 9.
4. I agree to the condition that I will be the only responsible person for any activity happened through the IP address allotted to this MAC address which will come under the offence of Cyber law whichever is applicable.
5. I agree that the College has all right to terminate the wireless connectivity without prior intimation.

Student Name: Atharva kavale

Signature: Kavale

Date: 29-9-2018

Class Teacher Name: Medha Tisgaonkar

Signature: Medha

* Endose photocopy of Adhar-Card

P.V.G.'s College of Science Pune 411 009.

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P.V.G.'s College of Science
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Pune - 411 009

Sample

Form

Collected from student

Pune Vidyarthi Griha's College of Science, Pune -09	PVGCOS
	NAAC
	3.2.1
	2015-16

Creation & Transfer of College:

Date and time of Activity held :	12th June 2015
Name Of the Activity :	How to write research paper
Resource Person :	Mrs.Shailaja Shirvekar
Activity In-Charge:	Mrs.Swati Joshi
Venue :	PVGCOS
No. Of Staff :	15

Our college conducted workshop on "How to write research paper"to encourage and guide the faculties to publish research papers and promotion of research culture in college. Mrs. Shailaja Shirvekar, a renowned faculty member of Wadia College was invited for guidance. Our faculty members showed great response and total **15** faculty members participated

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Vidyanagari, S. No. 44, Parvati,
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Pune Vidyarthi Griha's College of Science, Pune -09	PVGCOS
	NAAC
	3.2.1
	2015-16

Pune Vidyarthi Griha's
COLLEGE OF SCIENCE
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'Vidyanagari' S.No.44, Parvati, Pune 411009.
Tel./Fax No.:(020) 24221484/24227484 ♦Email: pvgscos@yahoo.co.in

Date: 08/06/2015

Dear All Faculty Members,

This is to inform you that, P. V. G's College of Science College Pune, organizing **"1-Day Workshop on How To Write Research Paper"** for Teachers on 12th June 2015.

The following committees are constituted for the smooth conduction of the Workshop. All the faculty members are requested to perform their responsibilities as per the instructions given by the Event Organizer.

Organizing committees

Sr. No.	Committee	Name of the Faculty	Responsibility	Signature
1	Overall coordination	Mrs. Swati Joshi	Overall coordination	
2	Budget	Mrs. Swati Joshi (Maths) Miss. Anuja Patil	Look after the budget	
3	Report committee	Mr. Ramakant Bhujbal Mrs. Sapna Malpanii	Prepare a report of the workshop	
4	Anchoring & Felicitation	Mrs. Priyanka Mahurkar Miss. Komal Yadhav	Prepare sequence for program. Procure felicitation Kits, Bouquets	
5	Catering	Mrs. Surekha Deshmukh Miss. Shilpa Shingte Mrs. Shilpa Pawale	Arrangement of the Breakfast, tea & lunch for the participants & guests Preparation of Coupons	
6	Registration committee	Mrs. Sapna Toshniwal Miss. Nilam Mane Mrs. Rupa Gokhale	Prepare registration form & feedback form. Collect reg. forms & Fees Preparation of Registration Kit Distribution of Certificate	
7	Stage arrangement & decoration	Mrs. Neeta Ranbhare Mrs. Isha Pingle Mrs. Shradha Zanwar	Dias arrangement. Flower decoration. Name Plates & Folders.	

R.A.Joshi
I/c Principal
(Prof. Rekha Joshi)

Principal
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Pune Vidyarthi Griha's College of Science, Pune -09	PVGCOS
	NAAC
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	2015-16

Date: 08 / 6 /2015

To,
Mrs. Shailaja Shirvekar
Wadia College, Pune.

Dear madam,

It gives us immense pleasure to invite you in our college on **Friday, 12th June, 2015** for **ONE DAY WORKSHOP ON 'How to Write Research Paper'.** Please guide our faculty members for writing Research Paper.

Please accept our invitation and oblige.

Please find enclosed **Programme Schedule for the detailed information about the Workshop.

Prof. Swati Joshi
Event Organizer

Prof. Rekha Joshi
I/c Principal

Principal
P.V.G.'s College of Science
Vidyanagari, S. No. 64, Parvati,
Pune - 411 009

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'Vidyanagari' S.No.44, Parvati, Pune 411009.
♦ Tel./Fax No.:(020) 24221484/24227484 ♦Email: pvgscos@yahoo.co.in

Date: 08 / 6 /2015

Notice

It gives us immense pleasure to communicate you that our college has organized a **ONE DAY WORKSHOP ON 'How to Write Research Paper' on Friday, 12th June, 2015 at 10.00 a.m.** in Class **Room no. 3.**

All the faculty members are requested to perform their responsibilities as per the instructions of Event Organizer.

Attendance is compulsory for all staff members.

Prof. Swati Joshi
Event Organizer

Prof. Rekha Joshi
I/c Principal

Principal
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Pune Vidyarthi Griha's College of Science, Pune -09	PVGCOS
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	2015-16

Schedule of the Workshop

12th June 2015 (Friday)		
Session	Timing	Topic
I	9.00 am - 09.30 am	Breakfast and Tea
	09.30 am - 10.15 am	Inauguration of Workshop, Felicitation
II	10.15 am - 11.30 am	How to select a topic for Research Paper
	11.30 am - 1.30 pm	Procedure of Writing Research Paper
	1:30 pm - 2.30 pm	***Lunch Break***
III	2.30 pm - 3.30 pm	Demo of Writing Research Paper
	3.30 pm – 3.45 pm	Tea Break
IV	3.15 pm – 4.15 pm	Presentation of Research Paper by Mrs. Swati Joshi

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P.V.G's College of Science, Pune – 9.

One Day Workshop On
"How To Write Research Paper"

Faculty Attendance

Guest: Mrs. Shailaja Shirvekar
Date: 12 June 2015

Sr. No	Name	Sign
1	Rekha Joshi	
2	Surekha Deshmukh	
3	Nita Ranbhare	
4	Swati Joshi	
5	Ramakant Bujbal	
6	Shilpa Pawale	
7	Priyanka Mahurkar	
8	Shilpa Shingate	
9	Komal Yadav	
10	Nilam Mane	
11	Swati Joshi(Maths)	
12	Sapna Toshniwal	
13	Rupa Gokhale	
14	Isha Pingle	
15	Shradha Zawar	
16	Sapna Malpani	
17	Anuja Patil	
18.	Projakta Agashe	

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3.2.1 Institution has created an ecosystem for innovations including incubation centre and other initiatives for creation and transfer of knowledge

IOT Workshop conducted in 2016-1

"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 **Time: 08.00 am to 02.00pm**

Sr. No	College Name	Participant's Name	Class	Sign of Participant
44	Modern Arts Science and Commerce College, Ganeshkhind, Pune	Miss. Prerana Jamdade	M.Sc. (I) (Comp. Sci.)	
45		Miss. Priyanka Shinde		
46		Miss. Roshani Sawant		
47		Miss. Rukhminee Baliram		
48		Miss. Sayali Ligade		
49	Modern Arts Science and Commerce College, Ganeshkhind, Pune	Miss. Sayali Wadekar	M.Sc. (I) (Comp. Sci.)	
50		Miss. Shweta Desai		
51		Miss. Shweta Ghumatkar		
52		Miss. Srushti Gavhane		
53		Miss. Trupti Chavan		
54		Miss. Utkarsha Salunke		
55		Navnath Ghorpade		
56		Nilesh Narkhede		
57		Pradip Patil		
58		Ravindra Gawali		
59		Sachu Prasannan		
60		Vaibhav Daware		
61		Vikas Supekar		
62	Prof. Ramakrishna More Arts, Commerce & Science College, Akurdi, Pune	Miss. Diksha Sathe	M.Sc. (I) (Comp. Sci.)	
63		Miss. Namrata Ghanwat		
64		Miss. Pradnya Narkhede		
65		Miss. Prajakta Chandhere		
66		Miss. Rohini Mane		
67		Miss. Sayali Kalbhor		

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"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 **Time: 08.00 am to 02.00pm**

Sr. No	College Name	Participant's Name	Class	Sign of Participant
21	Maharashtra College of Sci. and Comm., Pune	Miss. Dipti Patil	M.Sc. (I) (Comp. Sci.)	Dipti Patil
22		Miss. Kajal Tapkir		Ktapkir
23	Maharashtra College of Sci. and Comm., Pune	Miss. Komal Deshmukh	M.Sc. (I) (Comp. Sci.)	K.Deshmukh
24		Miss. Neha Dole		NDole
25		Miss. Nupura Ghevare		NGhevare
26		Miss. Priya Utikar		PUtikar
27		Miss. Priyanka Pawar		P.Pawar
28		Miss. Reshma Nalawade		RNalawade
29		Miss. Rutuja Durge		Rutuja.D.
30		Miss. Sayali Joglekar		SJoglekar
31		Miss. Snehal Tapkir		STapkir
32		Rohit Kanavajne		Rohitkane
33		Tushar Kanchan		TKanchan
34	Modern Arts Science and Commerce College, Ganeshkhind, Pune	Akshay Bahir	M.Sc. (I) (Comp. Sci.)	AkshayB
35		Aniket Dhokane		
36	Modern Arts Science and Commerce College, Ganeshkhind, Pune	Audumbar Mhetre	M.Sc. (I) (Comp. Sci.)	
37		Kalpesh Kadam		KKadam
38		Miss. Akshata Shinde		AkshataS
39		Miss. Amruta Salekar		ASalekar
40		Miss. Ashlesha Thube		AThube
41		Miss. Pooja Kapale		PKapale
42		Miss. Prachi Ghumatkar		PGhumatkar
43		Miss. Pratibha Shendkar		PShendkar

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Savitribai Phule Pune University
Board of Students' Welfare, Pune
P.V.G.'s College of Science, Pune
And
Harbinger Systems Pvt. Ltd., Pune

"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 **Time: 08.00 am to 02.00pm**

Sr. No	College Name	Participant's Name	Class	Sign of Participant
1	Kaveri College of Arts, Sci & Comm, Pune	Amit Kulkarni	M.Sc. (II) (Comp. Sci.)	
2		Akshay Lokhande		
3		Miss. Pratima Nishad		
4	Vishwakarma College of Arts, Comm and Sci., Pune	Aasim Kotwal	M.Sc. (I) (Comp. Sci.)	
5		Aman Dholekar		
6		Bijal Jadhav		
7		Farhaad Munshi		
8		Jagannath Timewar		
9		Lalit Sutar		
10	Vishwakarma College of Arts, Comm and Sci., Pune	Manoj Jangid	M.Sc. (I) (Comp. Sci.)	
11		Manoj Pingale		
12		Miss. Mohini Desai		
13		Miss. Prajakta Beluse		
14		Nitesh Shah		
15		Pramod Dhandekar		
16		Pritesh Pawar		
17		Rahul Madawe		
18		Shashank Mandlik		
19		Tushar Chhatre		
20		Vinayak Mane		

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"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 **Time: 08.00 am to 02.00pm**

Sr. No	College Name	Participant's Name	Class	Sign of Participant
68	Prof. Ramakrishna More Arts, Commerce & Science College, Akurdi, Pune	Mrunal	M.Sc. (II) (Comp. Sci.)	
69		Pratik Naval		Naval
70	Abasaheb Garware College, Pune	Kapil Jaeel		
71		Pranav Naik		
72	S.P. College, Pune	Mrs. Nishigandha Ranaware		
73	H.V. Desai College, Pune	Vipul Hamirani		Hamirani
74		Mrs. Manasi Joshi		

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Board of Students' Welfare, Pune

P.V.G.'s College of Science, Pune

And

Harbinger Systems Pvt. Ltd., Pune

"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (I) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
1	Aditya Kulkarni	Adityak
2	Aishwarya Darda	
3	Aishwarya Punekar	
4	Akshay Gadgil	
5	Atharva Deshmukh	
6	Bhushan Chikhalikar	
7	Darshan Kawde	
8	Diksha Gavali	
9	Harsh Gaikwad	
10	Harshada Rishi	
11	Karan Shinde	
12	Kartik Karekar	
13	Madhvee Totre	
14	Mandar Athavale	
15	Meenakshi Yadav	

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Jt. Principal
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Pune - 411 009

"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (I) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
16	Megha Tupe	
17	Minali Shah	
18	Nahush Naik	
19	Neha Chhaged	
20	Neha Parmar	
21	Nikita Kosandar	
22	Nikita Pawar	
23	Nisarg Shah	
24	Nisarga Athavale	
25	Nisha Pandit	
26	Omkar Kukade	
27	Omkar Mone	
28	Pawan Jadhav	
29	Pranali Ozarkar	
30	Prathmesh Gurav	
31	Priyanka Amrale	
32	Raj Hawaldar	
33	Ravina Bandal	
34	Sanket Deole	

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"One Day Workshop on IoT"

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Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (I) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
35	Shekhar Shinde	Shinde
36	Shibhada Shinde	
37	Shibham Jamdade	
38	Shubham Dodwad	Dodwad
39	Shubham Marathe	
40	Shubham Naik	Naik
41	Shweta Barad	Barad
42	Tejashree Phad	Tejashree P
43	Vidya Walhekar	Vidya W
44	Vishal Bande	

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Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (II) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
1	Abdulla Pathan	
2	Abhishek Bhagat	
3	Advait Deshpande	
4	Amey Babhale	
5	Ankita Thopte	
6	Anuja Ranaware	
7	Anurag Shivale	
8	Devyani Pawar	
9	Dipali Jadhav	
10	Gaurav Bhus	
11	Hrushikesh Talathi	
12	Kasturi Vartak	
13	Mitali Shah	
14	Neha Bhujbal	
15	Nikhil Chavan	

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"One Day Workshop on IoT"

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Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (II) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
16	Nilesh Habib	
17	Nitin Shelar	
18	Nitish Gogate	
19	Pooja Adodra	
20	Pooja Bangad	
21	Poonam Walhekar	
22	Pranita Pokharna	
23	Prathmesh Gaikwad	
24	Praveen Suryawanshi	
25	Prince Gupta	
26	Priyanka Borkar	
27	Raj Avnish	
28	Ravindra Kela	
29	Raviraj Sharma	
30	Renuka Khiste	
31	Rutuja Suryawanshi	
32	Sanket Dhanawale	
33	Shamali Bankar	
34	Sharvari Thakar	

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Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.Sc. (II) (Computer Science)

Sr. No	Participant's Name	Sign of Participant
35	Shraddha Bhosale	
36	Shreerang Joshi	
37	Shreya Shetiya	
38	Shrutika Joshi	
39	Smita Sabale	
40	Sonali Kalke	
41	Sumit Satam	
42	Varsha Tiwari	

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Principal
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Savitribai Phule Pune University

Board of Students' Welfare, Pune

P.V.G.'s College of Science, Pune

And

Harbinger Systems Pvt. Ltd., Pune

"One Day Workshop on IoT"

~ Registration Sheet ~

Day & Date: Saturday, 21st January, 2017 Time: 08.00 am to 02.00pm

Name of the College: P.V.G.'s College of Science, Pune-09

Class: M.C.A. (III) (Science)

Sr. No	Participant's Name	Sign of Participant
1	Abhishek Tathe	
2	Anway Bhutkar	
3	Apporva Patankar	
4	Ashiwini Raut	
5	Brahmi Jadhav	
6	Dhanashree Bagade	
7	Dipika Pote	
8	Gousia Mulla	
9	Madhuri Chavan	
10	Pranita Arde	
11	Prasad Kashid	
12	Rakhi Patil	
13	Ritesh Dhamnaskar	
14	Sanika Kulkarni	
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16	Swati Phadtare	

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1	Pooja Marathe	Marathe
2	Shivani More	More
3	Dhairya Trivedi	Trivedi
4	Aditya Muley	Muley
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I/C Principal
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Pune - 411 009

Sample

Research Paper

Assignment

Submitted by

Our

Students

Business Intelligence Software at Oracle

Submitted By :-
Pooja Adodra
(Roll No :- 501)

Introduction

Oracle Corporation is an American multinational computer technology corporation, headquartered in Redwood City, California. The company primarily specializes in developing and marketing database software and technology, cloud engineered systems and enterprise software products—particularly its own brands of database management systems. In 2011 Oracle was the second-largest software maker by revenue, after Microsoft.[4]

The company also develops and builds tools for database development and systems of middle-tier software, enterprise resource planning (ERP) software, customer relationship management (CRM) software and supply chain management (SCM) software.

History

Technology timeline

1979: offers the first commercial SQL RDBMS
1983: offers a VAX-mode database
1984: offers the first database with read-consistency
1986: offers a client-server DBMS
1987: introduces UNIX-based Oracle applications
1988: introduces PL/SQL
1992: offers full applications implementation methodology
1995: offers the first 64-bit RDBMS
1996: moves towards an open standards-based, web-enabled architecture
1999: offers its first DBMS with XML support
2001: becomes the first to complete 3 terabyte TPC-H world record
2002: offers the first database to pass 15 industry standard security evaluations
2003: introduces what it calls "Enterprise Grid Computing" with Oracle10g
2005: releases its first free database, Oracle Database 10g Express Edition (XE)
2008: Smart scans in software improve query-response in HP Oracle Database Machine / Exadata storage
2013: begins use of Oracle 12c which is capable of providing cloud services with Oracle Database

Products and services

Oracle designs, manufactures, and sells both software and hardware products, as well as offers services complementing them (such as financing, training, consulting, and hosting services). Many of the products have been added to Oracle's portfolio through acquisitions.
Software

Oracle's E-delivery service (Oracle Software Delivery Cloud) provides generic downloadable Oracle software and documentation.
Databases

Oracle Database

Release 10: In 2004, Oracle Corporation shipped release 10g (g standing for "grid") as the then latest version of Oracle Database. (Oracle Application Server 10g using Java EE integrated with the server part of that version of the database, making it possible to deploy web-technology applications. The application server comprised the first middle-tier software designed for grid computing.[citation needed] The interrelationship between Oracle 10g and Java allowed developers to set up stored procedures written in the Java language, as well as those written in the traditional Oracle database programming language, PL/SQL.)

Release 11: Release 11g became the current Oracle Database version in 2007. Oracle Corporation released Oracle Database 11g Release 2 in September 2009. This version was available in four commercial editions—Enterprise Edition, Standard Edition, Standard Edition One, and Personal Edition—and in one free edition—the Express Edition. The licensing of these editions shows various restrictions and obligations that are considered[by whom?] complex.The Enterprise Edition (DB EE), the most expensive of the Database Editions, has the fewest restrictions—but nevertheless has a complex licensing. Oracle Corporation constrains the is of Standard Edition (DB SE) and Standard Edition One (SE1) with more licensing restrictions, in accordance with their lower price.

Release 12: Release 12c became available on 1 July 2013.

Oracle Corporation has acquired and developed the following additional database technologies:

Berkeley DB, which offers embedded database processing

Oracle Rdb, a relational database system running on OpenVMS platforms. Oracle acquired Rdb in 1994 from Digital Equipment Corporation. Oracle has since made many enhancements to this product and development continues as of 2008.

TimesTen, which features in-memory database operations

Oracle Essbase, which continues the Hyperion Essbase tradition of multi-dimensional database management

MySQL, a relational database management system licensed under the GNU General Public License, initially developed by MySQL AB

Oracle NoSQL Database, a scalable, distributed key-value NoSQL database.

Middleware

Oracle Fusion Middleware

Oracle Fusion Middleware is a family of middleware software products, including (for instance) application server, system integration, business process management (BPM), user interaction, content management, identity management and business intelligence (BI) products.
Oracle Secure Enterprise Search

Oracle Secure Enterprise Search (SES), Oracle's enterprise-search offering, gives users

the ability to search for content across multiple locations, including websites, XML files, file servers, content management systems, enterprise resource planning systems, customer relationship management systems, business intelligence systems, and databases.

Oracle Beehive

Main article: Oracle Beehive

Released in 2008, the Oracle Beehive collaboration software provides team workspaces (including wikis, team calendaring and file sharing), email, calendar, instant messaging, and conferencing on a single platform. Customers can use Beehive as licensed software or as software as a service ("SaaS").

Applications

Oracle also sells a suite of business applications. The Oracle E-Business Suite includes software to perform various enterprise functions related to (for instance) financials, manufacturing, customer relationship management (CRM), enterprise resource planning (ERP) and human resource management. The Oracle Retail Suite covers the retail-industry vertical, providing merchandise management, price management, invoice matching, allocations, store operations management, warehouse management, demand forecasting, merchandise financial planning, assortment planning and category management.[citation needed] Users can access these facilities through a browser interface over the Internet or via a corporate intranet.

Following a number of acquisitions beginning in 2003, especially in the area of applications, Oracle Corporation as of 2008 maintains a number of product lines:

Oracle Fusion Applications

Oracle Fusion Applications

Oracle Social Engagement and Monitoring (SEM) System – Oracle has developed a Social Engagement and Monitoring Cloud service that allows businesses to capture relevant brand conversation from global web and social channels to understand commentary on their products. The Social Engagement and Monitoring cloud provides the most effective and efficient responses across social and customer experience channels. SEM is able to route correct responses to the right team, member, or customer-experience channel to ensure the best customer service. The analysis helps vendors to understand what is important to customers. It identifies trends, spikes, and anomalies to make real-time course corrections. It also can identify brand advocates. The SEM cloud identifies customer intention and interests by analyzing the common ways customers talk about a product or a service.

Oracle E-Business Suite

PeopleSoft Enterprise
- Siebel
- JD Edwards EnterpriseOne
- JD Edwards World
- Merchandise Operations Management (Formerly Retek)
- Planning & Optimisation
- Store Operations (Formerly 360Commerce)

Development of applications commonly takes place in Java (using Oracle JDeveloper) or through PL/SQL (using, for example, Oracle Forms and Oracle Reports/BIPublisher).[citation needed] Oracle Corporation has started[citation needed] a drive toward "wizard"-driven environments with a view to enabling non-programmers to produce simple data-driven applications.

Third-party applications

Oracle Corporation works with "Oracle Certified Partners" to enhance its overall product marketing. The variety of applications from third-party vendors includes database applications for archiving, splitting and control, ERP and CRM systems, as well as more niche and focused products providing a range of commercial functions in areas like human resources, financial control and governance, risk management, and compliance (GRC). Vendors include Hewlett-Packard, UC4 Software[citation needed] and Knoa Software.

Enterprise management

Oracle Enterprise Manager (OEM) provides web-based monitoring and management tools for Oracle products (and for some third-party software), including database management, middleware management, application management, hardware and virtualization management and cloud management.

The Primavera products of Oracle's Primavera Global Business Unit (PGBU) consist of project-management software.[24]

ORAchk (formerly RACchk) examines software in the Oracle software stack and reports on issues.

Development software

Oracle Corporation's tools for developing applications include (amongst others):

- Oracle Designer - a CASE tool which integrates with Oracle Developer Suite
- Oracle Developer – which consists of Oracle Forms, Oracle Discoverer and Oracle Reports
- Oracle JDeveloper, a freeware IDE
- NetBeans, a Java-based software-development platform
- Oracle Application Express – also known as APEX
- Oracle SQL Developer, an integrated development environment for working with SQL-based databases
- Oracle SQL*Plus Worksheet, a component of Oracle Enterprise Manager (OEM)
- OEPE, Oracle Enterprise Pack for Eclipse

Many external and third-party tools make the Oracle database administrator's tasks easier.[citation needed]

Operating systems

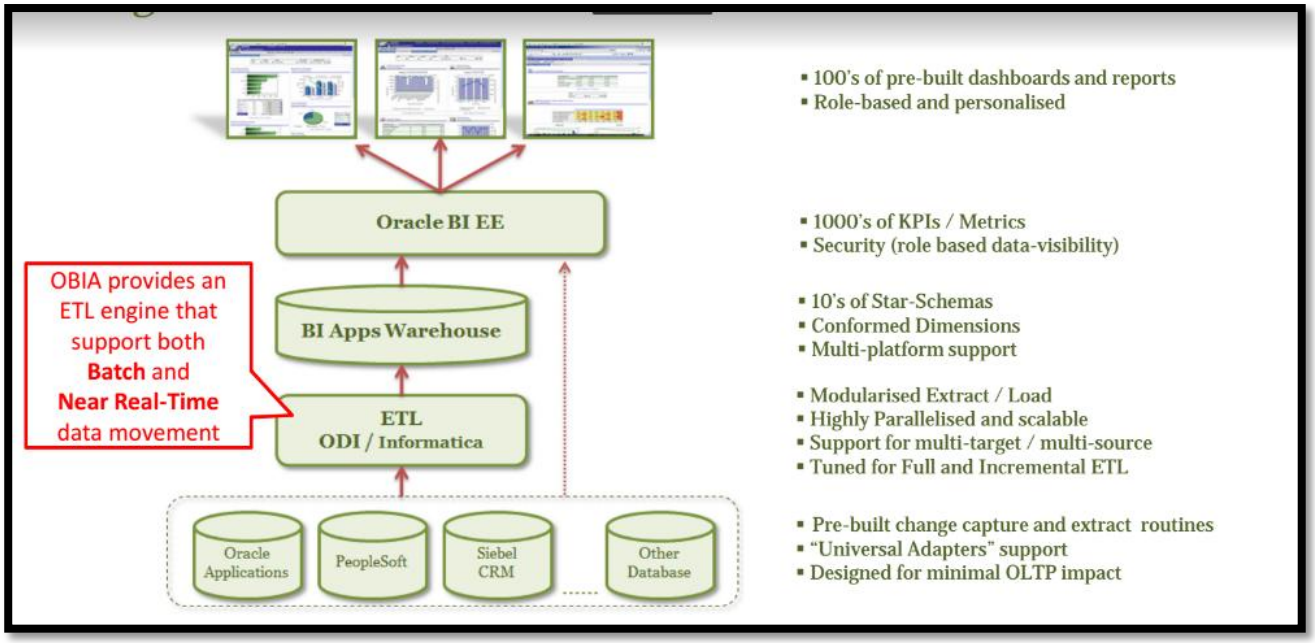
Oracle Corporation develops and supports two operating systems: Oracle Solaris and Oracle Linux.

List of Oracle BI Applications (OBIA)

Overview

• Oracle BI Applications provides customers with a pre-built set of Business Intelligence
applications based on Oracle BI 11g
• Fully extensible/customisable
• Covers a variety of business areas such as Sales, Service, Financials, Procurement and Spend,
Student Information and Operational Planning
• Typical data sources are:
  • Oracle EBS
  • Oracle PeopleSoft
  • Oracle Siebel CRM
  • Oracle JD Edwards
  • SAP

High level architecture



SUCCESS STORY -1

Problems reporting against OLTP

• Real-time Service Analytics was reporting direct against OLP

• When the system first went live, everything was good

• But before long, the size and complexity of the system and its reports had increased significantly:
  • 450 reports
  • >30K database queries per day
  • Outer-joining up to 14 tables in each query
  • Data volumes grew from 1 million SRs to 8 million Srs
• The system was soon at a breaking point

• OLTP are tuned to support lots of small transactions

• BI performance suffers because the data structures are not designed to support larger analytical queries:
  • Typically most joins have to be "outer-joins" (much slower compared to inner-joins)
  • Large numbers of tables involved in each query
  • Table joins are often sub-optimal(e.g. compound keys, character columns)
  • You are looking for a small subset of data mixed in with everything else
• How do you tune the OLTP analytical queries?
  • More indexes?
    • OLTPs already have 10,000s of indexes

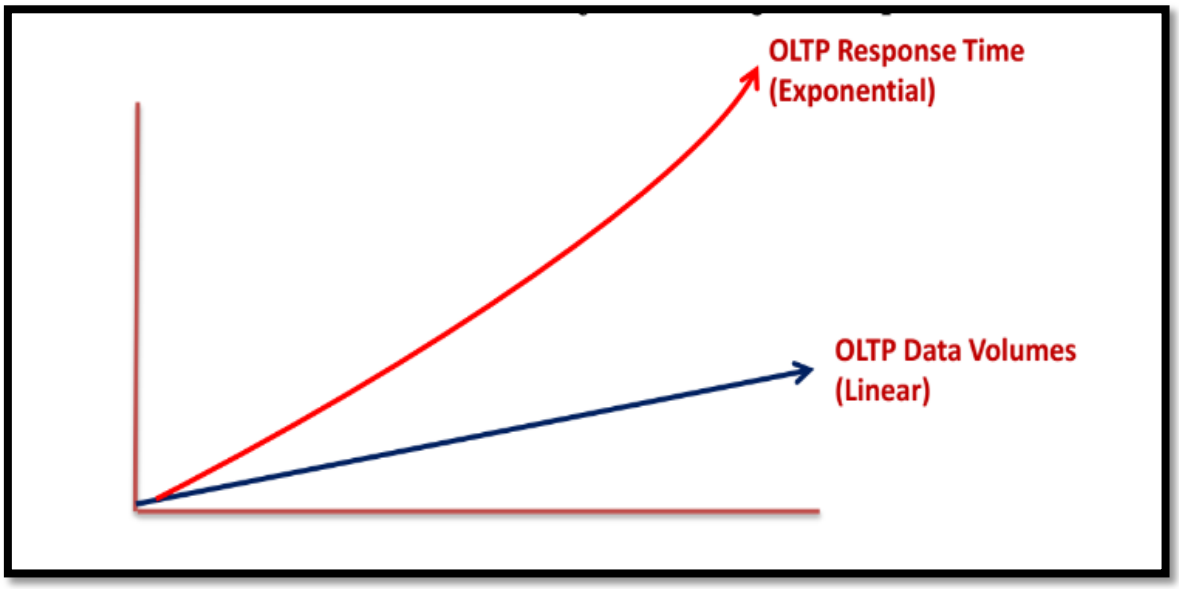
- Modify data structures?
    - Not supported
- Refuse or Simplify Business Requirements?
    - Not acceptable
- Buy more hardware?
    - Expensive short-term solution

Buying Hardware is not a Long-Term Solution

• Upgrading from one “Enterprise” Server to another does not provide a long-term solution
• New server had faster CPUs and lots more memory
• Extra capacity typically meant more concurrent users could be supported – individual queries were not much faster

To summarize,

OLTPs offer little or no scalability for analytical queries



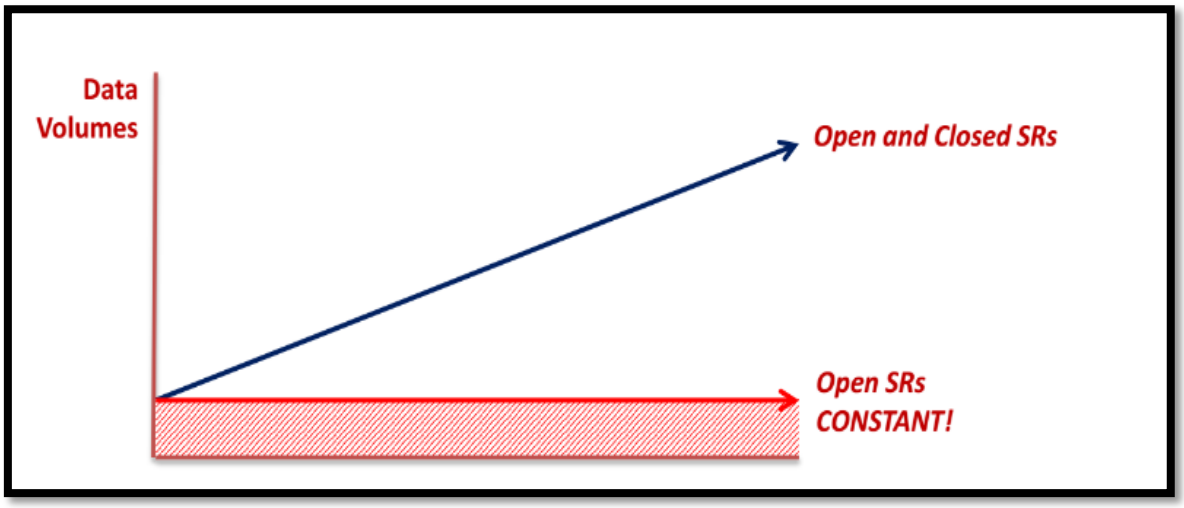
Solution

• A solution was in place that could not cater for future demands – something had to change
  • "We need real-time reporting with the performance of a data-mart!"

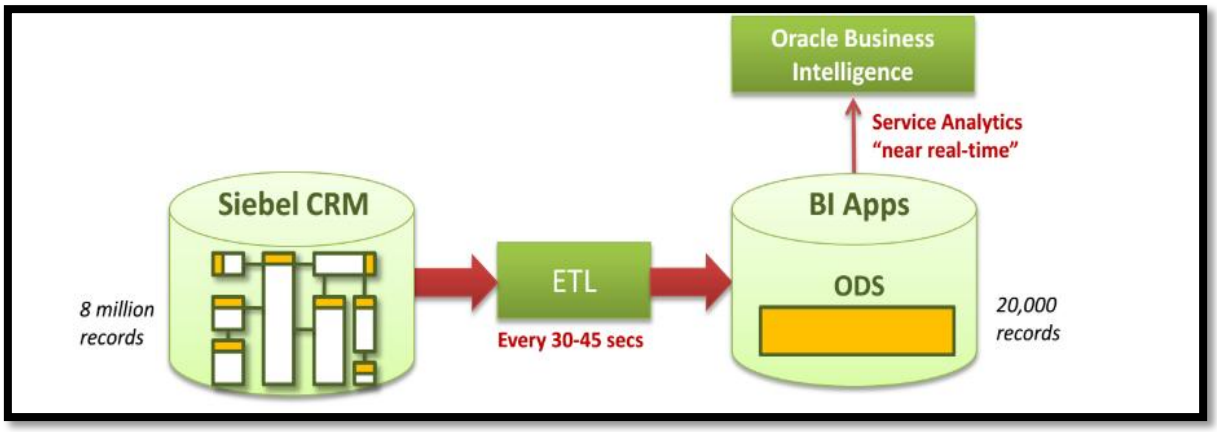
• Some analysis was performed
  • 95% of reports were based on "Open" SRs only
  • Out of 14+ tables, 60 columns of data were used
  • The Business users would accept <1 minute as "Real-Time"
  • At any one time there were only ever 20,000 "Open" Srs

Scalability

  • Whilst the number of "Closed" SRs grew over time, the number of "Open" SRs remained constant.If we had a data source that only contained "Open" SRs, then our performance would never degrade over time. 100% scalability.



• An “Operational Data Store” (ODS) was implemented
• Populated using BI Apps ETL engine (every 30-45 seconds)
• Contained only “Open” SRs – approx. 20K records
• 60 columns across 14+ OLTP tables all loaded into a single table on the ODS

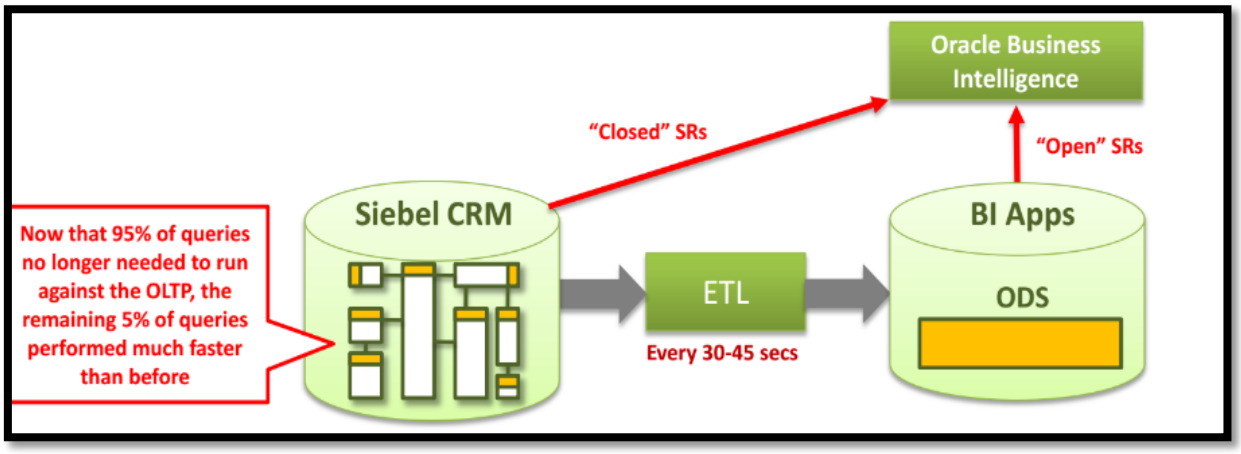


Further problem

• The ODS delivered a fantastic result for the 95% of reports which required “Open” SR data
• What about the 5% of reports that needed “Closed” SR data?
• For example:
• What is my “Average Time to Closure” for Today?
• This metric cannot be obtained from the ODS

The Solution – Oracle BI “Fragmentation”

• Oracle BI comes with a unique “Fragmentation” feature
• 95% of reports would obtain “Open” data from ODS
• 5% of reports would obtain “Closed” data from OLTP
• All seamless / transparent: End User sees everything as a “single” data source



To Summarize,

Implementing an ODS delivered the following benefits:
• Reports consistently delivering instant response times < 0.01s
• Long-term performance and scalability
• Future growth catered for
• Improved levels of user satisfaction and adoption
• Significant load taken off OLTP
• Not a single report had to be modified (Oracle BI "Subject Areas" remained unchanged)

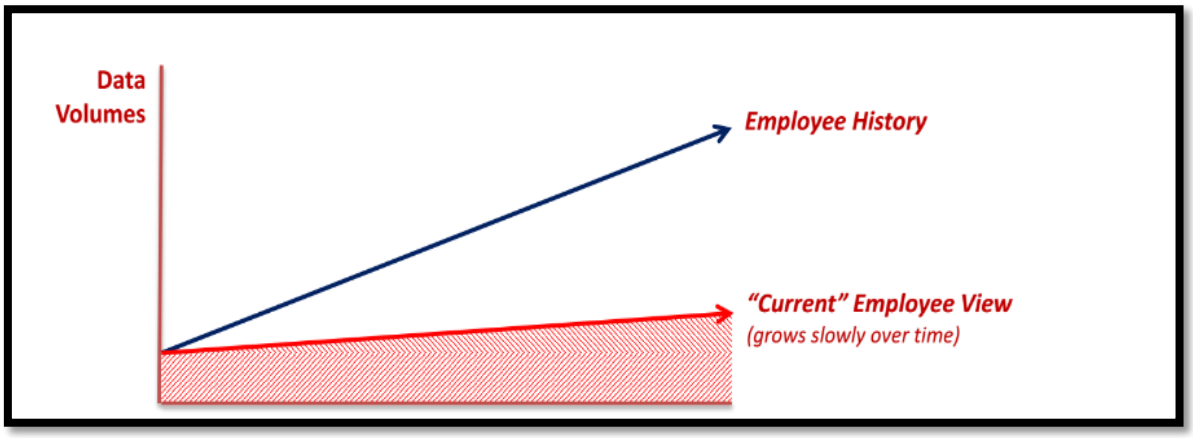
SUCCESSS STORY – 2

The Business Problem

• Towards the end of the financial year, the employee compensation for the next year has to be calculated
• Complex process – massive payroll budget
• Several key issues with existing system:
  • 350 columns of data spread over 20+ OLTP tables(requiring outer-joins)
  • Due to performance reasons, reporting extract could be, performed only once per day
  • Daily reporting for such a massive budget was inadequate
  • No "what-if" capabilities
  • Manual effort required to produce daily reports
  • Complex security model caused further performance impact

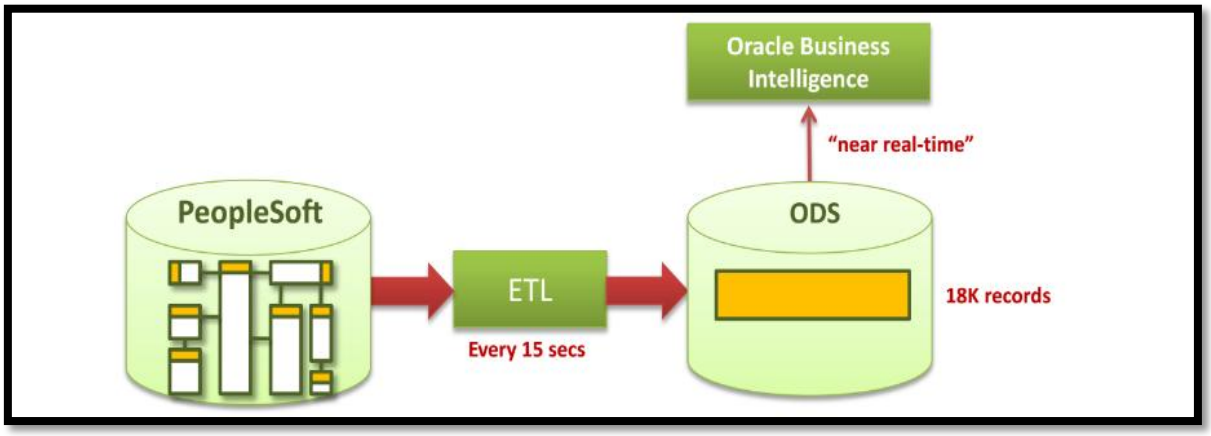
Analysis of Problem

• Lessons learnt from 1 st success story!
• Whilst the Employee history in PeopleSoft grows over time, to analyse current payroll data you only need to see the latest "current" view of each employee
• One record per employee – only 18,000 records!



The Solution

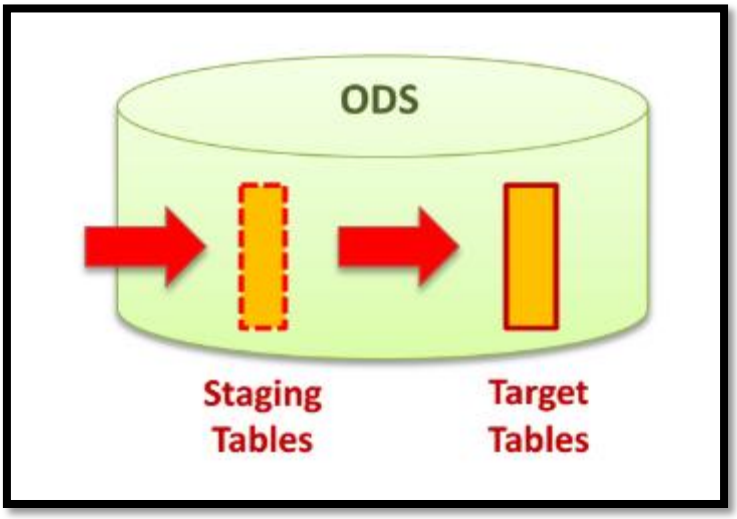
- All data loaded into a single table on ODS
- Data now available for reporting within 15 seconds (down from 24 hours)
- 600 custom metrics delivered in 9 weeks
- Further security tables loaded for data visibility



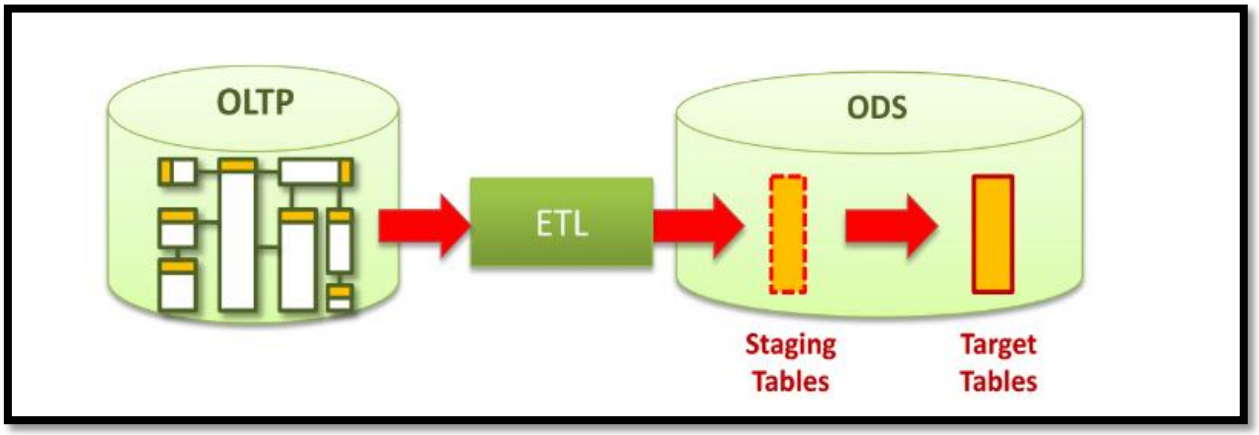
Design Considerations

Staging Area

• Even though the ETL is simplified compared to a "batch" ETL, you still need to load data via a Staging layer
• It is too difficult to perform an extract/update/insert/delete all within a single ETL mapping



Change Capture
• You need to be able to identify records which have changed since last ETL cycle
• "ETL Status" table required to store "Last ETL Start Date"
• "Last Update" timestamps on OLTP tables to identify records to extract
• "Delete Triggers" required to identify records deleted since last ETL



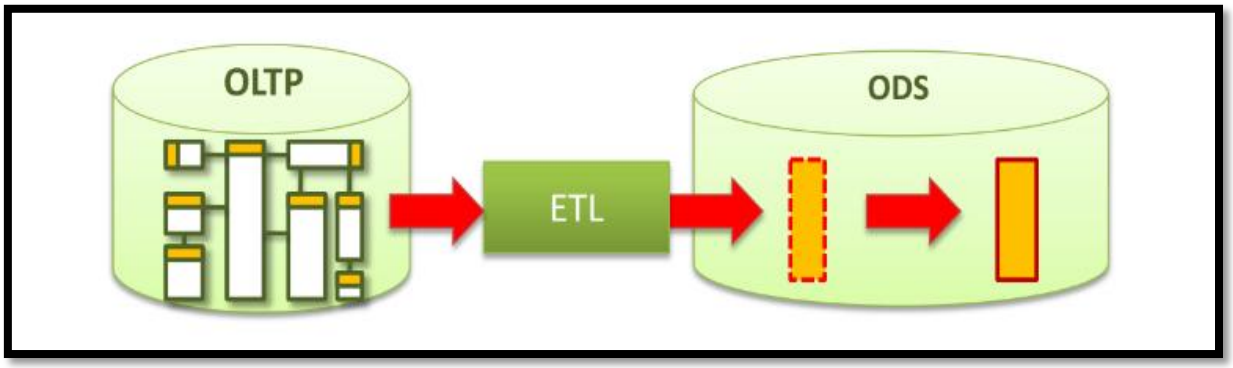
ETL Flow

• The ETL flow could end up being more complex than expected:
1. Obtain "Last ETL Start Date"
2. Extract records changed since last ETL and load into "Staging" area
3. Insert new records from "Staging" to "Target"
4. Update existing records from "Staging" to "Target"
5. Remove records that have been "deleted" on source OLTP
6. Remove records that are no longer required (e.g. changed from "Open" to "Closed")
7. Synchronise "security" tables and any other tables
8. Update "ETL Status" table with latest ETL run details
9. Delete ETL logs files (which build up rapidly with ETL running every 30 secs)

• The question that arised was which parts have to be done in a single transaction?

Tuning Full Load v/s Incremental Load

• In both customer examples provided in this presentation, 2 versions of the ETL routines were required: Extract / Insert / Update / Delete
• Full Load: Extract / Truncate / Insert
• Incremental Load:
• The SQL used to extract data from the source OLTP was different in both sets of routines – specific tuning was required to handle bulk/incremental workloads

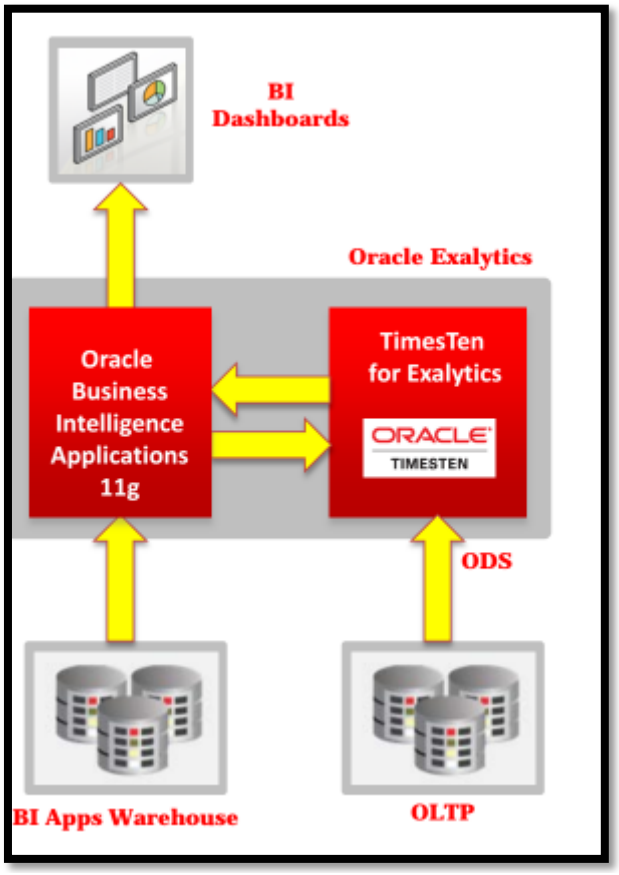


Today's OBIA Real-Time Architectures

Oracle Exalytics

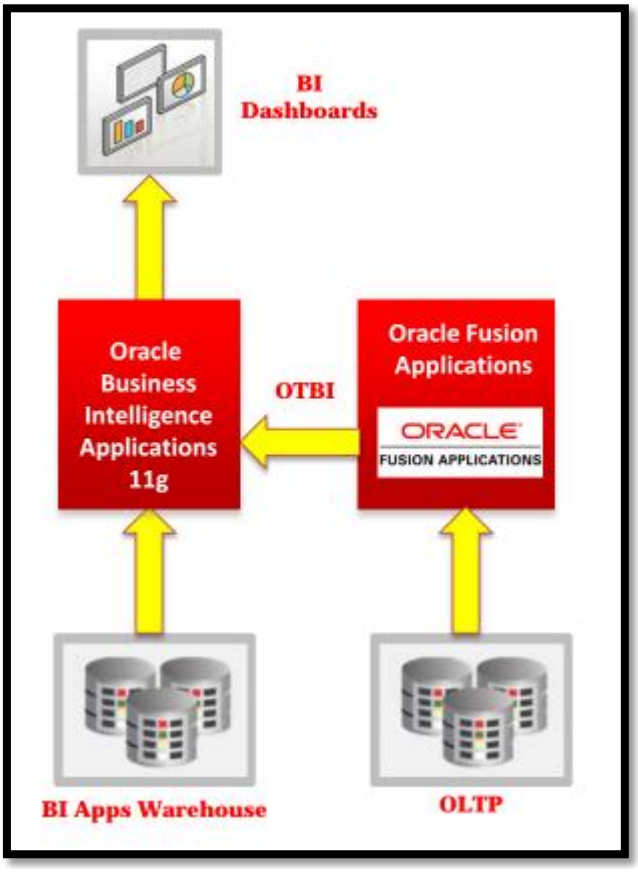
• TimesTen for Exalytics can be used as an ODS where data is cached "in-memory" for optimising real-time / operational reports
• The TimesTen database can be loaded via various means including:
  • DAC
  • Oracle Data Integrator (ODI)
  • ttImportFromOracle
  • Custom scripts / application code
  • Oracle GoldenGate

• Significant new performance features being introduced with TimesTen 12c



Today's OBIA Real-Time Architectures Oracle Transactional BI (OTBI)

• Using a new feature called OTBI, Oracle BI 11g is now capable of querying the "business components" of Oracle Fusion Applications
• The mechanism that allows you to query against the same "views" of data that are used to populate the screens of the source application
• The feature works against any java applications developed using Oracle ADF (Application Development Framework)
• BUT you are still reporting directly against the source OLTP. The benefit is maximised re-use of-code, not performance. The feature is mainly used for integrating BI content inside Fusion Apps



Before and After implementing Business Intelligence

In recent years, unprecedented market pressures, increased regulation and mobile technologies have caused turmoil in the insurance industry. New market leaders are able to outpace competitors in delivering new products, expand and optimize distribution channels and ensure channel compliance. Adaptability is the key to success. Business intelligence can help companies meet this new imperative by making the business more predictable. Without the right solution in place, insurance carriers lack the data required to support their most important directives. They resort to a trial and error approach, which increases the time it takes to move through the cycle of results, analysis, and course correction. By adding business intelligence to the mix, managers can make decisions based on facts, instead of guesswork. They can make smart changes faster and at a lower total cost to the business.

The articulated benefits of successfully implementing Strategic BI follow.

1. Quickly Identify and Respond to Business Trends

Whether tracking customer buying habits, inventory turns, or other sales and/or operational parameters, any and all of these areas are more readily evaluated and employed in the business decision-making process when coherent and consistent BI tools are available.

As it turns out, the graphical nature of most BI toolkits consistently and dramatically provide for easy access and demand attention to the most useful trends. Indeed, the very nature of the BI toolkit gives rise to a dynamic and readily identified representation of the most pertinent trend data.

2. Empowered Staff Using Timely, Meaningful Information and Trend Reports

The dynamic nature of the BI toolkit propagates a more highly informed management staff, making more highly informed and empowered decisions. If proper care is taken during the design and deployment phase, these valuable decision-making tools will be available to all levels of the organization.

Put succinctly, the very nature of strategic BI toolkits will empower managers at all levels to focus on only the most timely and critical data.

3. Easily Create In-Depth Financial, Operations, Customer, and Vendor Reports

One of the most useful inherent characteristics of a strategic BI implementation is the purposeful aggregation of company data. Because of this focused compendium of functional area information, the generation of meaningful and powerful reporting is almost automatic. In those cases where manual and specific report generation is required, the presentation of data and simple connectivity to useful tools makes report

generation simplicity itself.

On-demand reporting has never been so effortless or useful.

4. Efficiently View, Manipulate, Analyze, and Distribute Reports Using Many Familiar Third-Party Tools

Strategic BI systems do not require linkage or association with advanced and expensive computer software and hardware systems. Since many organizations do not have at their disposal multimillion-dollar budgets, already existing tools such as Microsoft Office, Crystal Reports, and other third-party software offerings can be readily employed, in most cases paying for the BI implementation itself.

5. Extract Up-to-the-Minute High-Level Summaries, Account Groupings, or Detail Transactions

Because of the inherent, organizational features of any well-executed BI deployment, users end up with access to pertinent, focused information exactly suited to their specific needs. Additionally, the information available is custom fit to those decisions that need to be made and on a most timely basis.

6. Consolidate Data from Multiple Companies, Divisions, and Databases

Consolidation and aggregation are the dual capstones of BI. They refer to the most promising and powerful aspects of BI.

As one of our most valuable customers related, "We were tired of doing our budgeting and planning the old way. Before we implemented our BI strategy, our fiscal budget took about nine months. We really needed to find other options to address the multiple spreadsheets that we had that were not consolidated and not updated. With BI in place, we did the first pass on our budget in about seven weeks."

7. Minimize Manual and Repetitive Work

This becomes especially true of the administrative tasks made necessary in non-BI environments due to data disparity and nonaligned data systems.

Once in place, the BI toolkit and the synchronistic nature of the BI environment will facilitate a very different orientation to the everyday tasks of data accumulation and processing.

Today thousands of businesses in all sizes, in all industries, all around the world are implementing and utilizing Strategic Business Intelligence. We are at the beginning, a time when the business and technological advances promised by BI are still being developed, explored, and enhanced.

Conclusion

• OBIA delivers an architecture which supports both real-time and historical reporting
• Report directly against the OLTP for a short-term “quick win”
• An Operational Data Store (ODS) is typically the only option which guarantees long-term performance and scalability
• The “Fragmentation” feature of Oracle BI is a differentiator and can be used to great effect when combining an ODS with data from another source

Business Intelligence Software at SYSCO

Submitted By :-

Prince V Gupta

(Roll No :- 519)

Introduction:

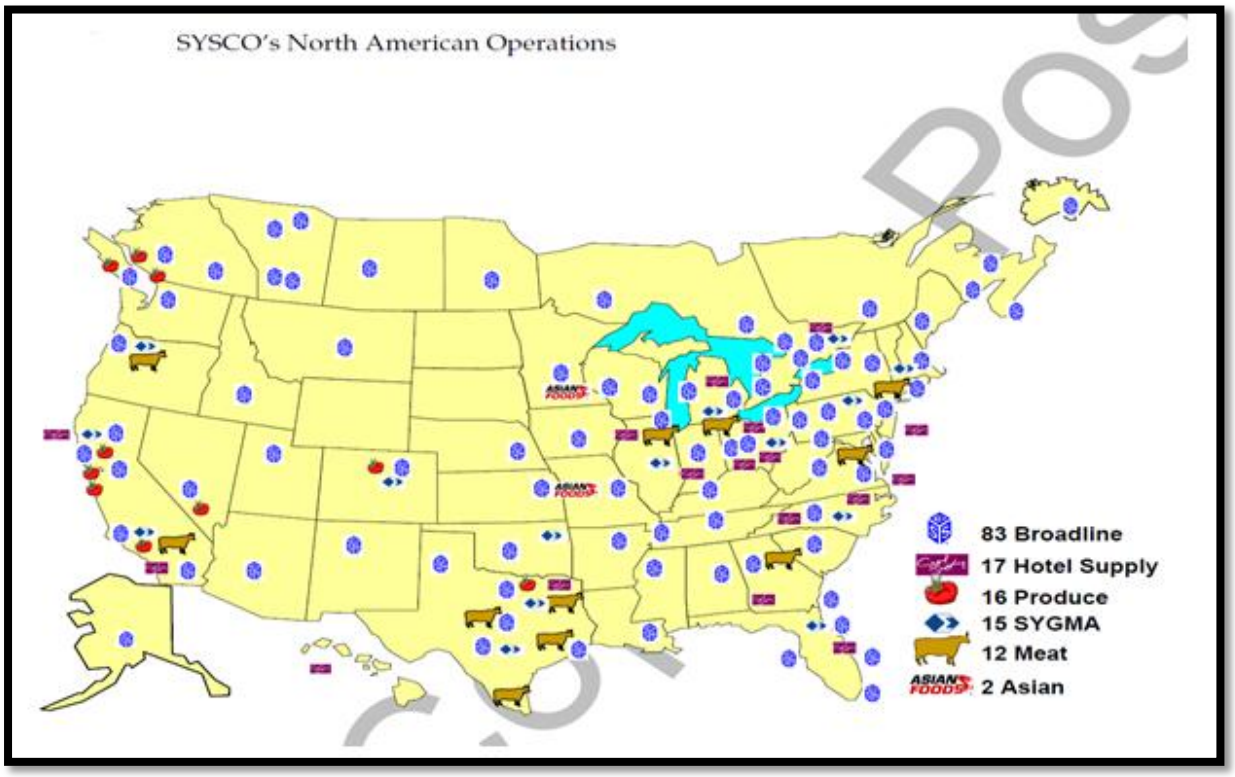
SYSCO is the largest food distributor in North America. Founded in 1969, it's headquarter is located in 1390 Enclave Parkway, Houston, Texas, U.S. It focuses on distributing food and food related products and services to restaurants, health-care, and educational facilities, lodging establishment, and other organization.

At present, the company serves close to 420,000 customers, employs 45,000 employees and has over 100 operating companies.

Sysco is the global leader in selling, marketing and distributing food products to restaurants, healthcare and educational facilities, lodging establishments and other customers who prepare meals away from home. Its family of products also includes equipment and supplies for the foodservice and hospitality industries. The company operates 196 distribution facilities serving approximately 425,000 customers. For Fiscal Year 2015 that ended June 27, 2015, the company generated sales of more than $48 billion.

Bill DeLaney assumed the role of President and CEO for the corporation in 2010, having become CEO and a member of Sysco's Board of Directors in 2009. He began his Sysco career in 1987 as Assistant Treasurer at Sysco's corporate headquarters in Houston.

Area of service: USA and Canada



Sysco has a decentralize business over 100 operating companies. In early 2003, it contained 83 Regional companies as broad line companies with geographical expansion from single cities to multiple state (approximately 75% of total sales) and 62 Specialty companies were acquired focus on food categories such as Asian food service, hotels, and chain restaurants. Each company had its own profit and loss statements then combined to create companywide financials.

Following are the Annual Income Statements from 2001-2003.

SYSCO's Income Statement (figures in thousands)

Period Ending	June 28, 2003	June 29, 2002	June 30, 2001
Total Revenue	**$26,140,337**	**$23,350,504**	**$21,784,497**
Cost of Revenue	20,979,556	18,722,163	17,513,138
Gross Profit	**$ 5,160,781**	**$ 4,628,341**	**$ 4,271,359**
Selling, General, and Administrative	3,836,507	3,467,379	3,232,827
Operating Income or Loss	**1,324,274**	**1,160,962**	**1,038,532**
Total Other Income/Expenses Net	8,347	2,805	(101)
Earnings Before Interest and Taxes	1,332,621	1,163,767	1,038,431
Interest Expense	$ 72,234	$ 62,897	$ 71,776
Income Tax Expense	482,099	421,083	369,746
Net Income	**$ 778,288**	**$ 679,787**	**$ 596,909**

Source: SYSCO annual reports.

Major Issues and Problems:

The operating companies had dissimilar hardware and software platforms. Even when two companies had same applications, they configured them differently. This led to a lot of confusion and data about the same customer was stored differently by the different organisations. There was no guarantee that they have same information to deal with the same customers. Part numbers, customer identifications, order statuses, and other information also were not consistent across all parts of the corporation. Due to this the company could not get aggregated daily sales report quickly by the company processes and it became difficult to monitor and compare performance.

Solution that led to failure:

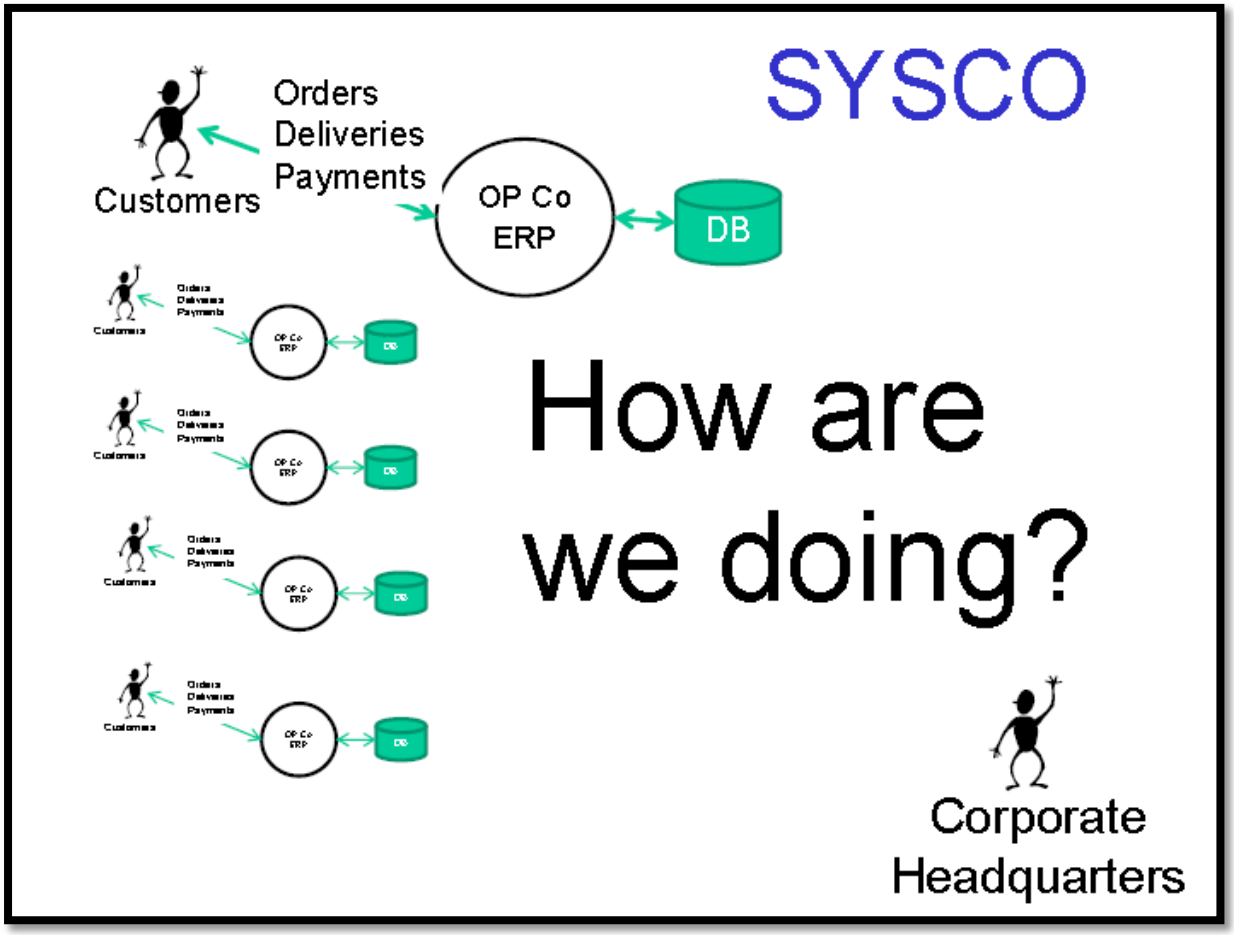
1) ***Information technology***

   In early 1990s, IT infrastructure which had highly decentralized organization structure was adopted. But no two operating system have same application were configured and loaded with same information. Also there was no guarantee that they have same information to deal with the same customers.

2) ***Enterprise Resource Planning System***

   In 1993, The Company was not able to get aggregated daily sales report quickly by the processes company was following. The conclusion was more standardized IT is

the way to solve the problems. Considering that ERP system was developed to handling basic operation processes in taking order, delivering goods and maintain general ledger. They were implemented in broad lines companies in Houston.

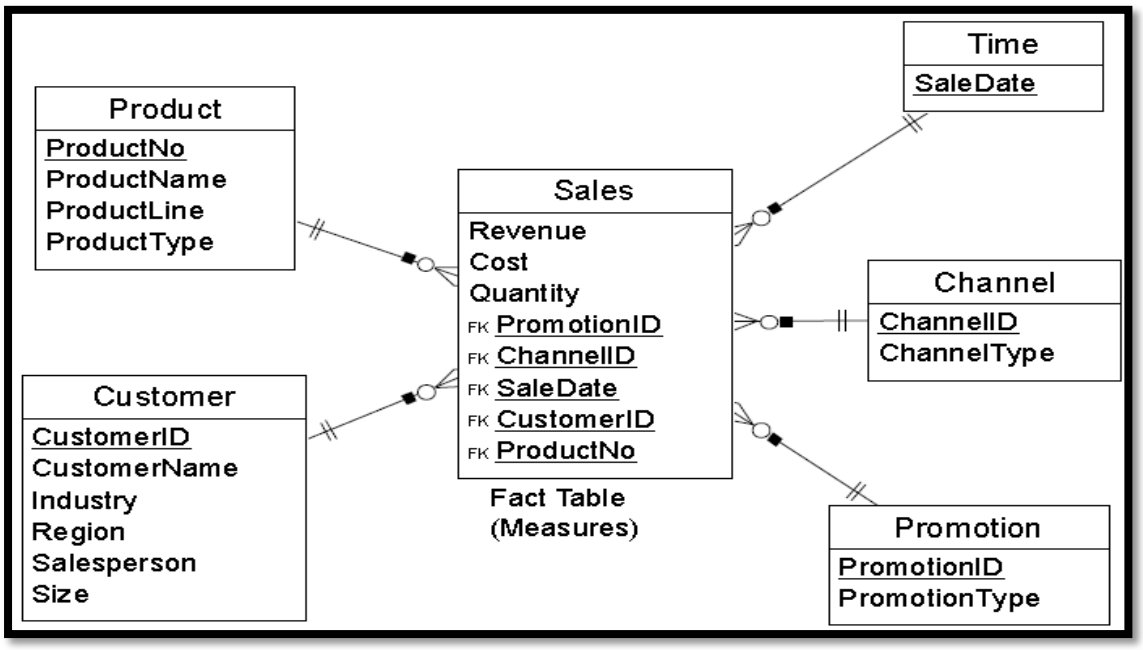


3) ***Data Warehouse***

In 2002, the large database system was adopted that served as single repository to operation and financial data generated by operating companies.
Following are the Data Warehouse structures:

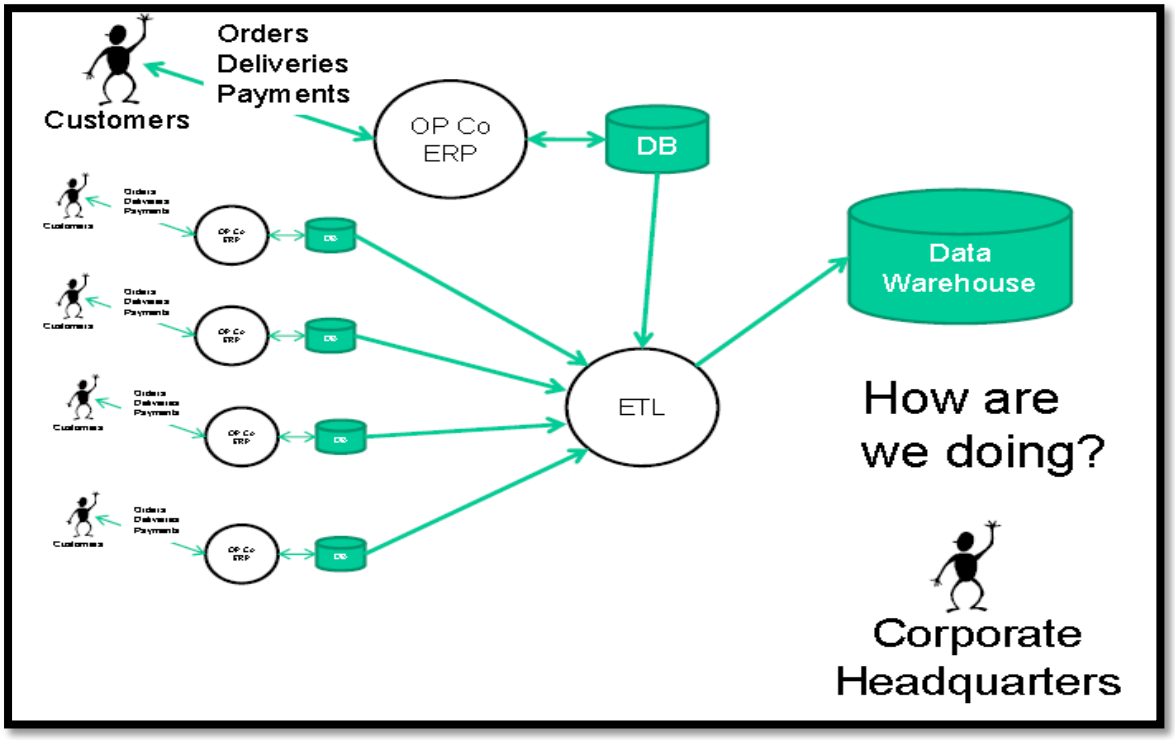
Dimensional Data Model (Star Schema)

• More difficult to load data (must transform data from the operational databases and integrate with external data to represent performance measures and dimensions)
• Potentially less flexibility and data detail
• Reduced storage and processing requirements
• Easy to develop BI applications



Mirror the Operational Database

• Easy to load data (copy from operational)
• Maximum flexibility and data content for existing data
• Massive storage and processing requirements
• Difficult or impossible to develop BI applications (if dimensions or performance measures are not included in operational databases)



Present Unsolved Issues:

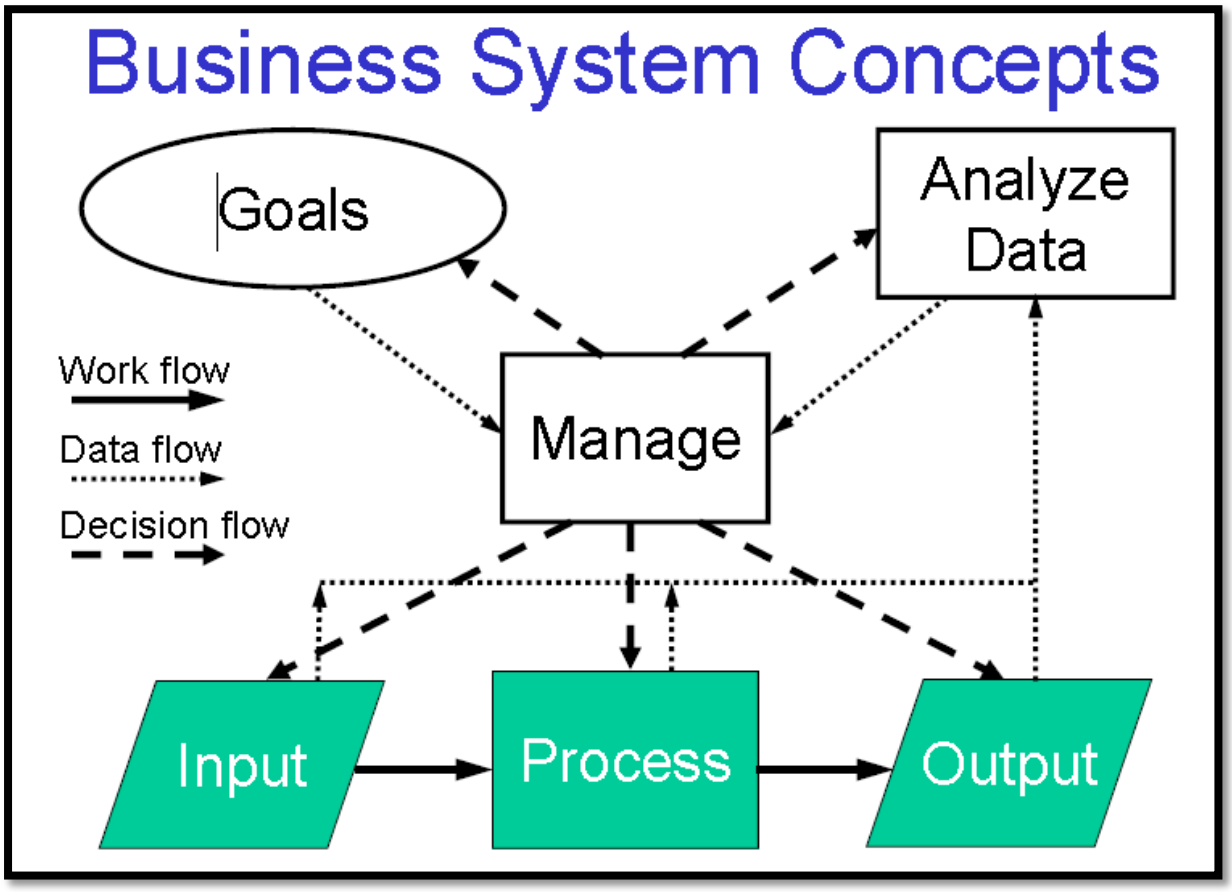
Even with ERP system, each broad line was implemented separately. Customer identifications, order statuses, and other important information were still not consistent across all parts of corporation. This gave rise to difficulties to monitor and compare performance. The company had data warehouse but did not have IT to analyze, monitor and extract meaningful information from data warehouse also most of employee were not expertise in this skill, most of employees would examine historical information which is less useful for predicting the future. Employees in the entire company needed to be better in anticipating the critical information.

Also with data warehouse in place, SYSCO did not have the technical expertise to analyse and monitor relevant and meaningful information out of such a voluminous amount of data. This paved way for Business Intelligence Software so that it can be implemented to address all the above needs.

Implementation of Business Intelligence Software :

BI software led user access to the data that was important to them with less complicated skill, and helped them to find useful information in haystack data. BI was linked to a company's data sources so that it can be accessed by IT staff and consultants. Users could concentrate only on information they needed and could generate graph, sales report by specific period and by name of sales person.

One of leading vendors of BI systems by Bernard Liautaud in 1990 was consulted for the implementation. The main concern was that information was contained in corporate databases and there were difficulties in accessing the information.



Competitive Advantages of Business Intelligence Software for SYSCO:

1. Ad hoc Querying: ability for user to generate new analysis quickly

2. Connectors: predefined interfaces with popular databases

3. The semantic layers: mapping between database elements

4. Caching: retrieve information from database very quickly

5. Professional Service: maximize profit with professional over 400 person worldwide

6. Dashboards – one-screen summary of important information. SYSCO executives and frontline employees can use it to take decisions swiftly

7. Extraction – Data from various sources can be combined to give a holistic picture. This can be highly useful to SYSCO to retrieve customer information

8. Data Mining – BI Software can analyze historical data and look for correlations, trends and patterns to help SYSCO achieve operational excellence

9. Predefined Reports – This will save a lot of managerial effort in skimming the data

10. Ad hoc querying and reporting – BI software can help generate reports and graphs as needed

11. Predictive analytics – It will help executives in forecasting future events and trends to chalk out the future strategy

12. Event Notification – BI software will provide alerts to users based on predefined occurrences across all the different companies of SYSCO

13. Distribution – Executives across different companies can share their dashboards, graphs, reports and other analyses. This will help the company in achieving common goals in more efficient ways.

Building the Business Case

When setting out to build a compelling case for business intelligence, it's important to address two types of metrics: performance metrics and process metrics. Familiar key performance indicators (KPIs) measure return on assets, return on equity, gross margin, and operating margin. By contrast, key process metrics use balanced scorecards to:

• Track the introduction of new products

• Monitor continuous improvement

• Show cross-functional root cause analysis

• Analyze forward-looking business data

Each department needs its own list of expected performance and process benefits, and the entire set must align with the corporate strategy. Some sample questions to ask include:

• How long does it take to create a custom report today?

• How many questions go unanswered due to the difficulty of getting information?

• What is the cost of not having quick access to information at every level of the organization?

• How fast can you go to market with a new product today?

• Where could you use better/faster/more information?

• Do you know if you are profitable at a policy level?

• How can you accelerate the go-to-market cycle?

• Do you know if you are profitable at a policy group level (e.g., male drivers, age 21, who drive Mazdas)?

• Can you save money within your claims workflow if you knew certain information?

• Would more accurate pricing information make you more competitive?

Keeping all this in mind SYSCO firstly used the software in 1995 for tracking sales by customers. Few questions turned up which were supposed to be addressed for successful implementation of the software.

Q1: What additional products could the company selling to each customer?

1. Compare client's activity for customer in term of size, type, geography, etc.

2. What customer actually order and create opportunities report

3. Obstacles in BI software should be removed

Q2: Which of the company current customer are most likely to lose?

1. Using the software to determine customer ordering pattern over time

2. Highlight on historical loyal customers was reduce purchasing volume

** Both of 2 things above indicated that customers had become unhappy with the company service. **

Q3: What will be the biggest obstacles faced by the business intelligence implementation as it expands throughout SYSCO?

The biggest obstacle the BI implantation would face as it expands through SYSCO would be the resistance from managers and IT professionals unwilling and unable to use the new tools. The strongest resistance would come from the divisions that already have their own business intelligence tools in place, because they might not see the advantages (or any other reasons) of switching.

Q4: Why did SYSCO decide to initially address only two questions with its new BI software, rather than using it as a more general analysis tool in the operating companies? Why did Business Objects recommend this approach? What are its strengths and weakness?

Two questions addressed were:

1) What additional products could we be selling to each of our customers?

BI software could help answer this question by comparing a given client's activity to what was typical for a customer of it size, type, geography, and so on.

2) Which of our current customers are we most likely to lose?

The Business Objects team recommended that SYSCO address this question by using the software to examine customers' ordering patterns over time, highlighting instances where a historically loyal customer was reducing its order volumes, either for all products or for a specific category

Business Objects recommended the two question approach so that operating companies and their employees would become comfortable with the software by at first using only a narrow and easily comprehensible range of its capabilities.

Also, these two questions are very important ones for all SYSCO's companies, and gaining some insight on them will demonstrate to users and companies the power of the BI software (and hence a valuable demonstration for Business Objects.)

Q5: Will effective use of BI software ever be a competitive differentiator for SYSCO? Wouldn't it be straightforward for another food service company to also purchase and implement similar software?

Two views of IT's impact on competitive advantage and positioning:

1) BI can be considered a possible source of competitive differentiation for SYSCO and, it so, whether it is a sustainable one.
How easy would it be for a competitor to coy this move?
Could any competitor do it?
How quickly could they catch up?

2) BI will become a necessary part of a company's IT infrastructure, but because it is easy to acquire and adopt it will not cause changes in competitive positioning.

Effective use of BI software could become an extremely useful competitive differentiator for SYSCO. Because of their long operating history and industry leadership, they have the greatest depth and breadth of data.

Properly managed in data warehouses, this provides the opportunity to do much more data mining than their competitors would be able to do. This leveraging of their market position, using data mining, would allow SYSCO to keep strategic advantages that other food service companies could not easily match, even using similar software.

Q6: How much software should Day purchase at this time?

The '*Middle of the Road'* approach is more balanced in terms of the number of licenses and more timely answers to solve business needs and better analyze and monitor customer information.

"Middle of the Road" approach to buy the quantity of software would be SYSCO's safest method. This approach would result in purchasing more licenses and also provide SYSCO the customer intelligence.

Thus taking into consideration the software cost installations and the number of licenses it would be beneficial for SYSCO to go with the '*Middle of the Road'* approach to access more timely answers to solve business needs and better analyze and monitor customer information.

The drawbacks of this approach would be that SYSCO would not get the supply chain module and they will have to invest in a few more licenses for the next year which compared to '*Bare Bones'* technique which would result in increased expenses due to higher license cost.

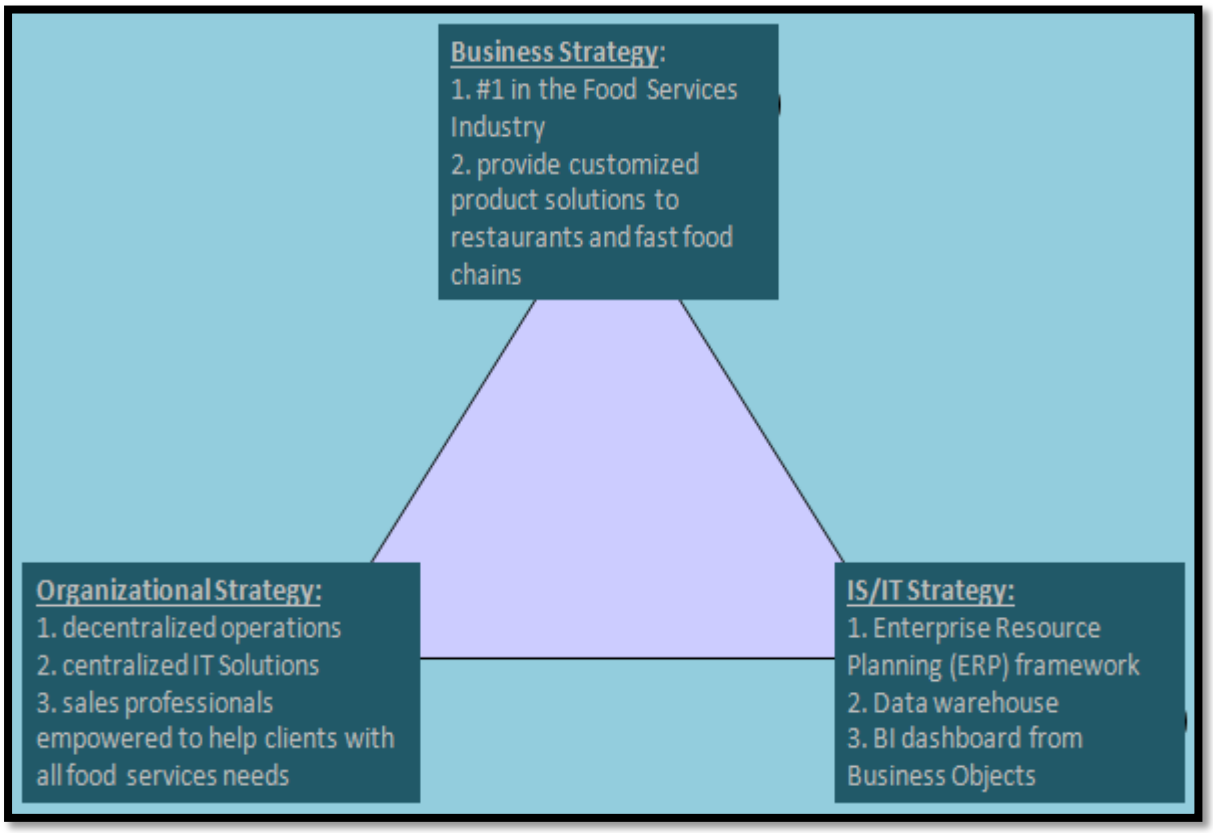
Though implementing the '*Volume Discount'* approach would be the most economically feasible option, since BI hasn't been used at SYSCO it might not comply with its unique business needs. There are many other companies which have implemented BI successfully SYSCO could probably follow their footsteps in buying the software.

SYSCO is in a position to afford the upfront costs of the '*Middle of the Road'* approach. As compared to the '*Bare Bones'* and '*Volume Discount'* the '*Middle of the Road'* approach is more balanced in terms of the number of licenses and the type of software provided.

After addressing all these questions a final presentation to the Directors was made.

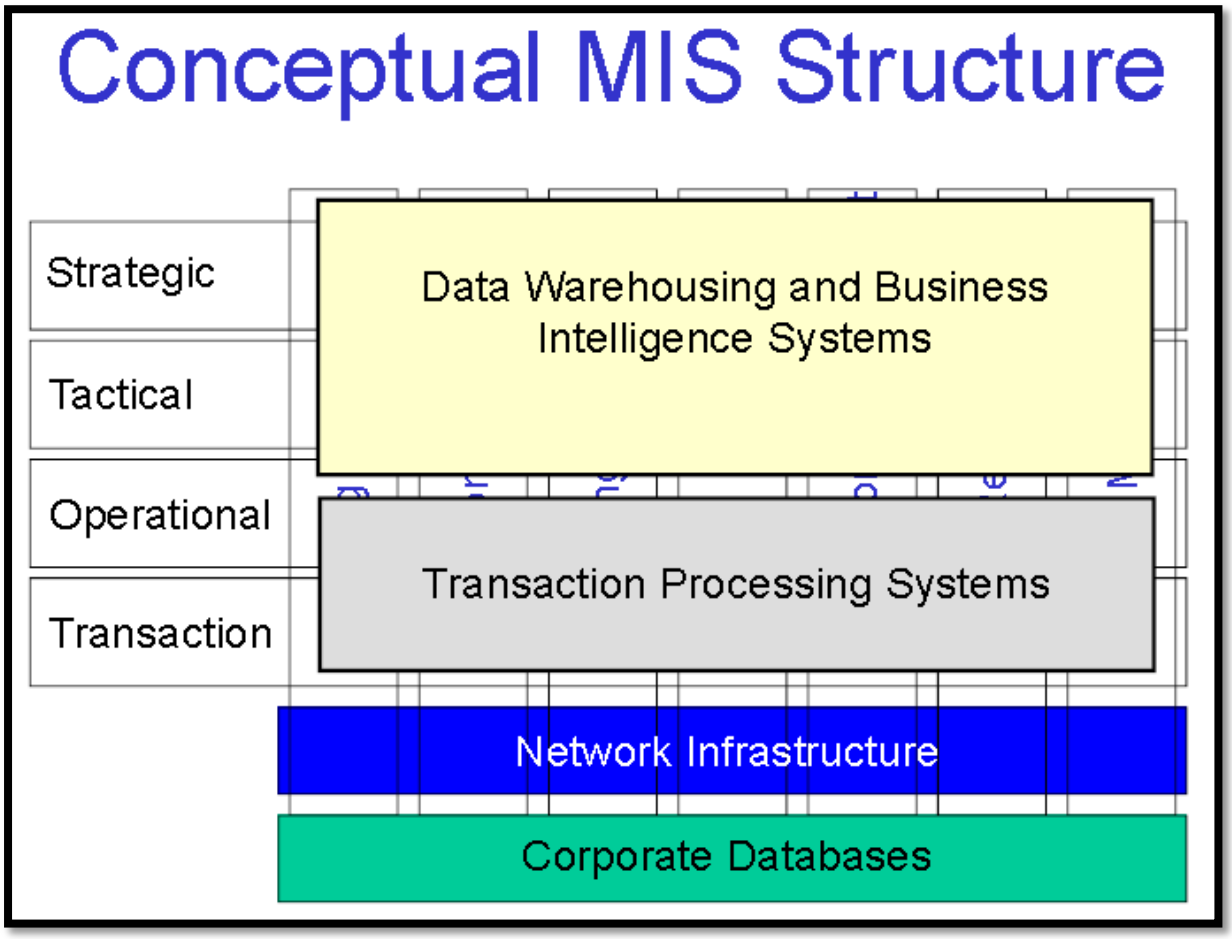
Proposal to make prototypes of the software were presented to Director's council to obtain approval for purchasing software. Directors voted to approve the BI project with Business Objective as detail budgeted and timeline; they estimated the budget among $2.5 million and $3.5 million.

Following strategy model was devised.



Following Critical Success Factors (CSF) for Business Intelligence were concluded

1. Focus Your Efforts
2. Secure Executive Sponsorship
3. Build a Winning Project Plan
4. Make it Easy to Data Access
5. Make it Easy to Analyze Data
6. Make it Easy to Share Knowledge
7. Deliver Exceptionally Clean Data
8. Insist on Zero Client Administration
9. Implement Bullet-Proof Security
10. Plan for Growth



Rolling Out Business Intelligence scenarios :

Scenario 1: "Bare Bones":

1. Minimum purchase no. of licenses and software components
2. **Not** license new customer intelligence analytical module
3. Sysco would work with Business Objects consultant instead of calculation in Analytic Module
4. Sysco not need to pay for additional module
5. Need to buy more license with higher price within 6 months

Benefits:

- ❑ Minimize upfront investment
- ❑ Learn before adding extra software
- ❑ Minimize time and expense consuming in training

Scenario 2 : "Middle of the Road"

1. Broader access to the business intelligence.
2. Purchase additional software license in customer analysis and analytic module
3. Cover for the next 9-12 months
4. The company may need to additional license in about a year

Benefits

- ❑ Moderate investment with lower risk
- ❑ Learn to use functions before decision making in adding highend module

Scenario 3: "Volume Discount"

1. Gain advantage from volume discount
2. Cover for next 2 years
3. Broader view of business data with customer intelligence and analytic module also supply chain module

Benefits

- ❑ More discount on license
- ❑ Preparation for expansion in advance
- ❑ Avoid going back to Director's council for more budget in adding module

Bare Bones

- Minimum Number of licences
- Perfomance dashboards licences to 10 people at each of 83 operating companies
- 3 people at each operating companies and 5 corporate IT professionals would perfrom query analysis
- 1 license at each company for for reporting purposes
- **Don't buy Customer Intelligence Analytical Module, develop in-house (Cost Saving)**

Middle of the Road

- 15 dashboard licenses at each of the operating company
- 1300 basic licenses instead of 1000 in bare bones approach
- **Buy Customer Intelligence Analytical Module (Additional Cost)**
- Buy additional licesnces in another one year

Volume Discount

- Leverage the volume discount that Business Objects is providing
- **Buy Customer Intelligence Analytical Module as well as Supply Chain Module (Maximum Cost up front)**
- 2000 basic licenses
- Cost effective in a sense that bulk buying will fetch more discount and firm can afford to pay entire cost up front to avail the discount

Module	Scenario One— "Bare Bones"	Scenario Two— "Middle of the Road"	Scenario Three— "Volume Discount"
Query/Analysis			
Licenses	254	425	684
Description	(Broadline=3*83, IT=5)	(Broadline=5*83, IT=5, Other=5)	(Broadline=8*83, IT=5, Other=15)
Cost per seat	$600	$450	$300
TOTAL	$152,400	$191,250	$205,200
Performance Management			
Licenses	845	1,265	1,685
Description	(Broadline=10*83, IT=5, Other=10)	(Broadline=15*83, IT=5, Other=15)	(Broadline=20*83, IT=5, Other=20)
Cost per seat	$700	$600	$500
TOTAL	$591,500	$759,000	$842,500
Reporting—Create			
Licenses	86	171	174
Description	(Broadline=1*83, IT=3)	(Broadline=2*83, IT=3, Other=2)	(Broadline=2*83, IT=4, Other=4)
Cost per seat	$1,000	$900	$800
TOTAL	$86,000	$153,900	$139,200
Info Infrastructure and Reporting View			
Licenses	1,000	1,300	2,000
Description	everyone involved in project	everyone involved in project	everyone involved in project
Cost per seat	$450	$350	$250
TOTAL	$450,000	$455,000	$500,000
Analytical Module			
Licenses	--	425	684
Description		(Broadline=5*83, IT=5, Other=5)	(Broadline=8*83, IT=5, Other=15)
Cost per seat	$500	$400	$300
TOTAL	$0	$170,000	$205,200
Supply Chain Analytical Module			
Licenses	--	--	435
Description			(Broadline=5*83, IT=5, Other=15)
Cost per seat	$450	$350	$250
TOTAL	$0	$0	$108,750
TOTAL SOFTWARE COST	$1,279,900	$1,729,150	$2,000,850
Plus: consulting	$1,000,000	$1,000,000	$1,000,000
Plus: maintenance (20%)	$ 255,980	$ 345,830	$ 400,170
TOTAL	**$2,535,880**	**$3,074,980**	**$3,401,020**

Find the Hidden Sources of ROI

When measuring ROI for business intelligence, many people default to standard financial metrics. They weigh revenue enhancements, cost savings, and cost avoidance against hard dollar costs such as license fees, server costs, ongoing maintenance, internal labor, and any external services.

Along these lines, managers might ask questions such as:

• How long will it take to get the BI system into production?

• How much money will I save by going with a pre-built model versus building one internally?

• Will I be able to maintain the new solution with fewer resources?

• How much will it cost me to customize the models that are in the market today?

• What does one solution save me versus another?

• What is the cost of developing everything in house?

• How much maintenance cost will I save over my current solution?

This is a fine place to start, but quantitative measurements will fluctuate wildly depending on the project scope, system design, management commitment throughout the project and the organization's ability to handle change. Moreover, these numbers alone cannot tell the whole story.

To form a complete picture, it's important to factor in the larger business benefits. For example, what is the value of higher customer satisfaction, better decision making, or a single version of the truth? When companies implement business intelligence properly, they benefit from the empirical analysis and increased accountability that comes from better visibility.

So what exactly should an insurance enterprise measure to calculate the results that business intelligence can deliver?

Before and After Business Intelligence:

In recent years, unprecedented market pressures, increased regulation and mobile technologies have caused turmoil in the insurance industry. New market leaders are able to outpace competitors in delivering new products, expand and optimize distribution channels and ensure channel compliance. Adaptability is the key to success. Business intelligence can help companies meet this new imperative by making the business more predictable. Without

the right solution in place, insurance carriers lack the data required to support their most important directives. They resort to a trial and error approach, which increases the time it takes to move through the cycle of results, analysis, and course correction. By adding business intelligence to the mix, managers can make decisions based on facts, instead of guesswork. They can make smart changes faster and at a lower total cost to the business.

The benefits of successfully implementing Strategic BI follow.

1. Quickly Identify and Respond to Business Trends

Whether tracking customer buying habits, inventory turns, or other sales and/or operational parameters, any and all of these areas are more readily evaluated and employed in the business decision-making process when coherent and consistent BI tools are available.

As it turns out, the graphical nature of most BI toolkits consistently and dramatically provide for easy access and demand attention to the most useful trends. Indeed, the very nature of the BI toolkit gives rise to a dynamic and readily identified representation of the most pertinent trend data.

2. Empowered Staff Using Timely, Meaningful Information and Trend Reports

The dynamic nature of the BI toolkit propagates a more highly informed management staff, making more highly informed and empowered decisions. If proper care is taken during the design and deployment phase, these valuable decision-making tools will be available to all levels of the organization.

Put succinctly, the very nature of strategic BI toolkits will empower managers at all levels to focus on only the most timely and critical data.

3. Easily Create In-Depth Financial, Operations, Customer, and Vendor Reports. One of the most useful inherent characteristics of a strategic BI implementation is the purposeful aggregation of company data. Because of this focused compendium of functional area information, the generation of meaningful and powerful reporting is almost automatic. In those cases where manual and specific report generation is required, the presentation of data and simple connectivity to useful tools makes report generation simplicity itself.On-demand reporting has never been so effortless or useful.

4. Efficiently View, Manipulate, Analyze, and Distribute Reports Using Many Familiar Third-Party Tools

Strategic BI systems do not require linkage or association with advanced and expensive computer software and hardware systems. Since many organizations do not have at their disposal multimillion-dollar budgets, already existing tools such as Microsoft Office, Crystal Reports, and other third-party software offerings can be readily employed, in most cases paying for the BI implementation itself.

5. Extract Up-to-the-Minute High-Level Summaries, Account Groupings, or Detail Transactions

Because of the inherent, organizational features of any well-executed BI deployment, users end up with access to pertinent, focused information exactly suited to their specific needs. Additionally, the information available is custom fit to those decisions that need to be made and on a most timely basis.

6. Consolidate Data from Multiple Companies, Divisions, and Databases

Consolidation and aggregation are the dual capstones of BI. They refer to the most promising and powerful aspects of BI.

As one of our most valuable customers related, "We were tired of doing our budgeting and planning the old way. Before we implemented our BI strategy, our fiscal budget took about nine months. We really needed to find other options to address the multiple spreadsheets that we had that were not consolidated and not updated. With BI in place, we did the first pass on our budget in about seven weeks."

7. Minimize Manual and Repetitive Work

This becomes especially true of the administrative tasks made necessary in non-BI environments due to data disparity and nonaligned data systems.

Once in place, the BI toolkit and the synchronistic nature of the BI environment will facilitate a very different orientation to the everyday tasks of data accumulation and processing.

Today thousands of businesses in all sizes, in all industries, all around the world are implementing and utilizing Strategic Business Intelligence. We are at the beginning, a time when the business and technological advances promised by BI are still being developed, explored, and enhanced.

	2009	2003
Sales	$37B	$26B
Net Earnings	$1B	$0.78B
Employees	47K	46K
Operating Companies	140	100

Sales comparison for SYSCO before BI implementation in 2003 and after BI implementation in 2009.

Comments:

1. SYSCO should go for **Middle of the Road** approach as it can generate better return on investments over an relatively smaller expense.
2. Customer Intelligence Analytical Module will prove to be useful in finding customer behavior patterns and selling products according to customer needs. It will also provide strategic information on the customers that we are likely to lose to our competitors. This can help in customer retention.
3. 15 Performance dashboard licenses can be used to summarize relevant business information at an operating company level. At each company, employees as well as executives will be able to view the performance data based on various parameters in an graphical and interactive way. It will lead to effective monitoring of their areas of responsibility.
4. As Business Objects implementation has not been done before in the firm, this approach will give the firm an opportunity to find the effectiveness of BI initiative in improving the overall performance of the firm, before it buys more licenses.
5. Sysco has already built a decentralized IT infrastructure and has the data warehouse in place. Business Object licenses will help it analyze the huge data in warehouse for better decision making.
6. Sysco should leverage Business objects and build an expertise in predictive analysis.

Conclusion:

Rapid access to business intelligence is essential to compete and thrive in today's insurance industry. Traditional ways of calculating ROI do not tell the whole story of the value that a business intelligence solution can bring to the enterprise. Managers must consider hard and soft metrics and understand that it takes time for the full benefits to accrue. Companies that consider a broader range of returns will have a more accurate picture of expected results and a strong business case to present to their stakeholders.