



TREASURY RESOURCES

@ *PhoenixHecht.com*

This presentation was originally
given by:

Nora T. Arpin, First VP Treasury Management, Comerica Bank
and

Randall L. Wilds, Manager Treasury Operation, Hayes Lemmerz

At the 15th Annual Windy City Summit

For questions about this material contact Randall at:

rwilds@hayes-lemmerz.com

15th Annual Windy City Summit

Updating a Corporate Cash Management System

Using Spreadsheets and Artificial Intelligence

Nora T. Arpin
First Vice President
Treasury Management
nora_t_arpin@comerica.com



Randall L. Wilds
Manager,
Treasury Operations
rwilds@hayes-lemmerz.com



Who We Are



Comerica

A \$50 billion bank holding company headquartered in Michigan with offices in most major U.S. Cities and affiliates in California, Florida, Texas, Canada and Mexico. Comerica is the 12th largest commercial business lender & ranks 1st amount the top 50 U.S. bank holding companies in commercial loans as a percent of total assets.



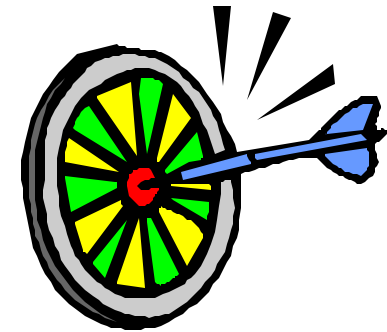
Hayes Lemmerz International, Inc.

Hayes Lemmerz International, Inc. is one of the world's leading global suppliers of automotive and commercial highway wheels, brakes, powertrain, suspension, structural and other lightweight components. The Company has annual sales of \$2.2 billion with 46 plants, 6 joint venture facilities and 14,000 employees worldwide.



Session Objective

- Target audience
 - ❖ Companies using a simple or complex manual cash position worksheet
- Focus
 - ❖ Automation using a hybrid system
 - ❖ Artificial intelligence tools
 - ❖ Issues to consider
 - ❖ Benefits & risks of hybrid systems compared to a manual system



Discussion Topics



- Cash manager's responsibilities
- Considerations in designing a system
- Types of systems
- Tools & artificial intelligence
- Results expected



Typical Responsibilities of the Cash Manager

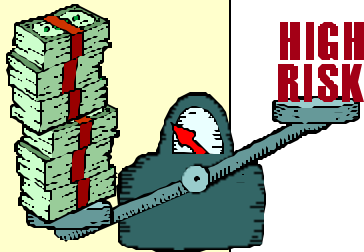


- Managing cash flows
 - Designing bank account structures
 - Monitoring flows
- Managing short-term liquidity
 - Short-term borrowing
 - Short-term investing
- Bank administration
 - Bank relations
 - Signatory administration
 - Bank compensation



Additional Cash Manager Functions

- Foreign exchange trading
 - Funding transactions
- Risk exposure management
 - Insurance
 - Hedging (commodity / interest)
 - Fraud prevention
- Cash forecasting
 - Cash flows
 - Forecast performance



Updating Your Cash Management System: Where to Start

- Review your current environment
- Review your sources of data
- Question automation
- Define scope
- Cost benefit analysis

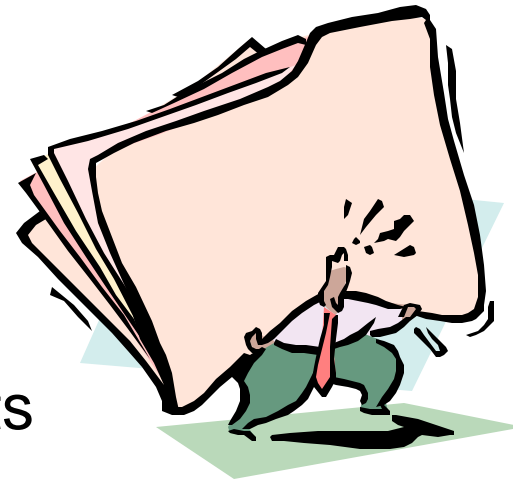


Types of Data: What, Why & Where?



Data Cash Managers Typically Receive

- Balances
- Funds transfer transactions (ACH / wire)
- Availability
- Lockbox receipts
- Paid checks
- Returned items
- Funds transfer requests
- Check issuance data
- Foreign exchange requests



Data Cash Managers Typically Provide

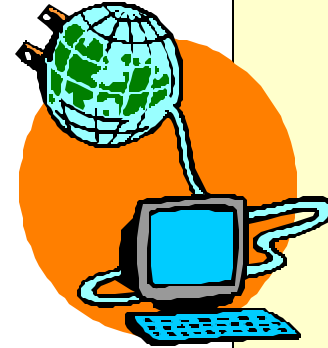
- Wire transfer instructions
- Tax payments
- Foreign exchange
- ACH / payroll
- Positive pay files
- Data for general ledger accounting



Typical Data Sources / Repositories

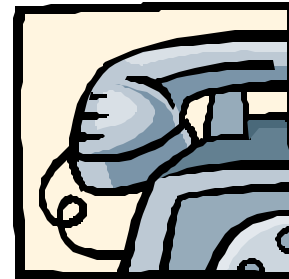
- Electronic systems

- ❖ Domestic banks
- ❖ Foreign banks
- ❖ Internal systems



- Manual communication

- ❖ Fax
- ❖ Phone
- ❖ Paper



To Automate or Not to Automate?



Comerica

HAYES LEMMERZ™
INTERNATIONAL, INC.

Functions Most Often Automated in Treasury Systems

- Cash management
 - ❖ Monitoring balances and transactions
 - ❖ Initiating funds transfers
 - ❖ Cash position determination
 - ❖ Management reporting
- Investing
- Borrowing
- Foreign exchange transactions
- General ledger transactions



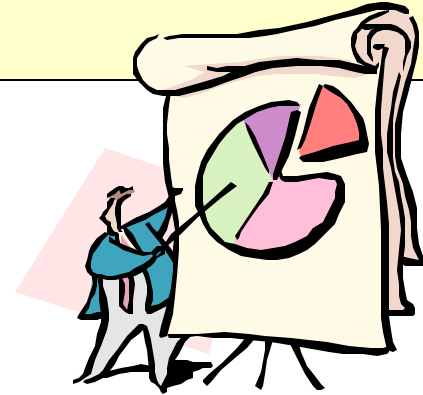
Frequently Overlooked Opportunities for Automation

- Bank account signatory administration
- Inter-company loans
- Fraud prevention
- Forecasting
- Accounts payable / receivable
- Bank reconciliation
- Bank service fee management



Analyzing the Cost Benefits of Automation

- Size of company
- Scope of project
- Transaction volume
- Dollar amount of cash flow
- Internal benefits of automation
 - ❖ Availability of integration with legacy systems
 - ❖ Accounting structure: centralized vs. decentralized
 - ❖ Level of reporting requirements
 - ❖ Data analysis needs
- Number of banks used for transactions



Other Automation Considerations

- Audit & security
 - Nature of data and location of workstation / server
 - Controlling access to files
 - Dual control (ensure/maintain integrity)
 - Audit trail
- “What if” scenarios vs. formula based analysis & data tracking
- Availability of information systems resources

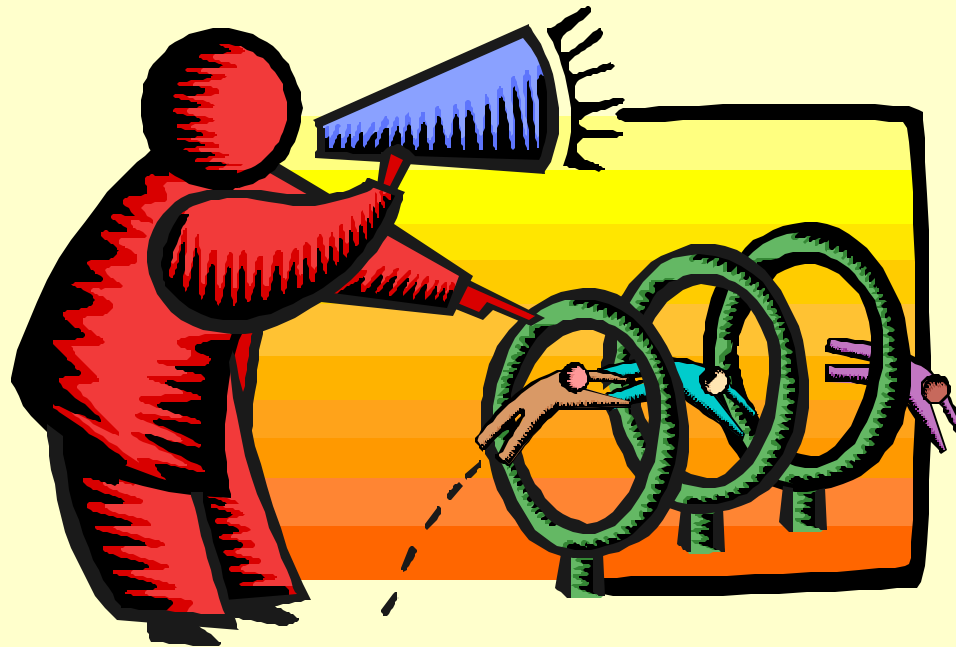


Levels of Workflow Automation

- Manual
 - ❖ Lotus or Excel
 - ❖ Paper worksheet
- Workstation
 - ❖ Super systems
 - ❖ Customized
 - ❖ Shrink wrap
- Hybrid
 - ❖ Bank provided
 - ❖ Company provided



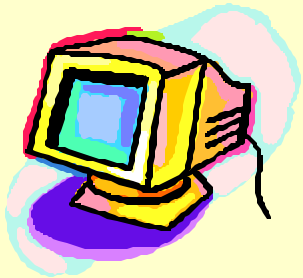
Types of Automation



Manual System Workflow Receive Data



Bank A Reporting System



Bank B Reporting System

Manual Input of Reporting Information from each bank system into Worksheet.



Manual System Workflow Send Data



Bank A Reporting System



Bank B Reporting System

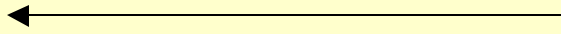
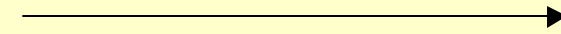
Manual Input of Wire and ACH Instructions into each bank system separately.



Treasury Workstation Workflow



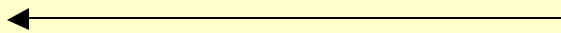
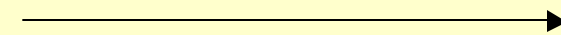
Automated Bank Reporting Info



Transaction Instructions



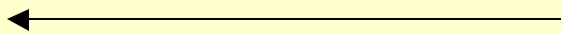
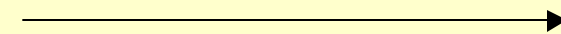
Automated Bank Reporting Info



Transaction Instructions



Automated Bank Reporting Info



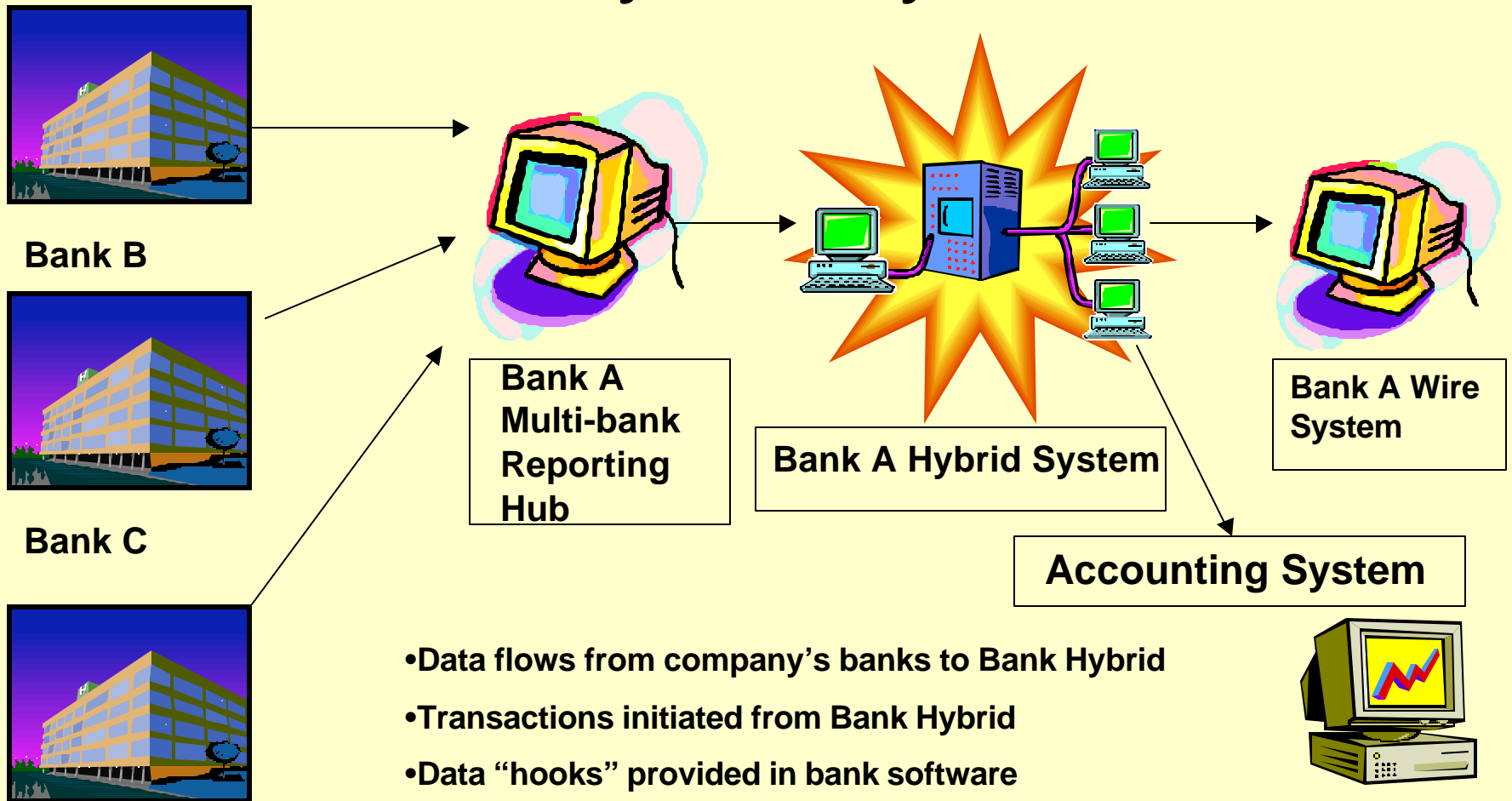
Transaction Instructions



Accounting



Bank Hybrid System



- Data flows from company's banks to Bank Hybrid
- Transactions initiated from Bank Hybrid
- Data "hooks" provided in bank software
- Auto update to bank provided spreadsheet or worksheet
- Design can be customized
- Export to legacy systems



Company Hybrid



S
o
f
t
w
a
r
e

ABC Company				
DAILY CASH POSITION WORKSHEET				
24-May-01				
	Concentration Bank (000)	Bank A (000)	Bank B (000)	Total (000)
Opening Available Balance	\$ 50	\$ 10	\$ 50	\$ 110
Receipts				
Lockbox Deposits	\$ 1,500	\$ 5,000		\$ 6,500
Wires	10,000			10,000
ACH	4,000			4,000
Anticipated Receipts	500			500
Concentration Transfers	4,910			NA
Total Receipts	\$ 20,910	\$ 5,000	\$ -	\$ 21,000
Total Available Cash	\$ 20,960	\$ 5,010	\$ 50	\$ 21,110
Disbursements				
Controlled Disbursement	\$ 3,000		\$ 2,500	\$ 5,500
Wires	2,000			2,000
ACH	3,500			3,500
Zero Balance Funding	600			600
Anticipated Disbursements	150			150
Funding Transfers	2,550			NA
Total Disbursements	\$ 11,800	\$ -	\$ 2,500	\$ 11,750
Interim Position	\$ 9,160	\$ 5,010	\$ (2,450)	\$ 9,360
Target Balance	\$ 100	\$ 100	\$ 100	\$ 300
Transfer Generated	\$ (9,060)	\$ (4,910)	\$ 2,550	NA

- Data flows from company's banks to software tool
- Data "hooks" created using software mapping
- Auto update via software to spreadsheet
- Spreadsheet designed by company
- Wire transfers & ACH initiated manually into each bank's system
- Export to legacy Systems from spreadsheets using software tool

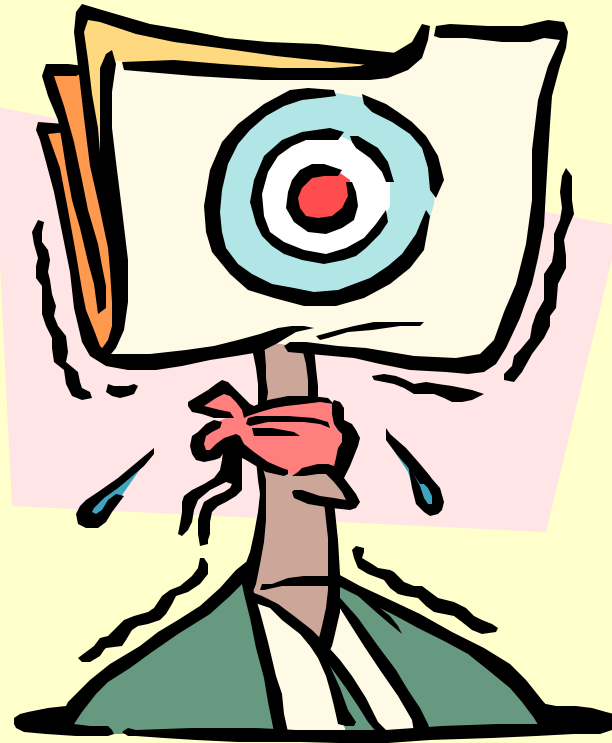


Functions Most Often Automated in Hybrid Systems

- Cash management
 - ❖ Monitoring balances and transactions
 - ❖ Initiating funds transfers
 - ❖ Cash position determination
 - ❖ Reporting and data analysis
- Inter-company loans
- General ledger interface
- Accounts receivable / payable interface



Spreadsheets Anyone?



Example of Cash Position Spreadsheet

MicroManagement

File Edit Insert Format Tools Data Navigate Options Window Help

Worksheet Daily CPW Detail

E10 =Eastern!E10+Western!E10

	A	B	C	D	E	F	G	H	I	J	K
1	Sample Manufacturing Company										
2	Master Rollup										
3											
4											
5	Available Balance				\$0.00						
6											
7	Receipts										
8	Lockbox Deposits				\$9,220.12						
9	Incoming Wires				\$39,084,408.55						
10	Incoming ACH				\$3,775,369.58						
11											
12	Total Receipts				\$42,868,998.25						
13											
14	Cash Available				\$42,868,998.25						
15											
16	Disbursements										
17	Controlled Disbursement				\$893,732.93						
18	Outgoing Wires				\$3,131,210.96						
19	Outgoing ACH				\$289,313.18						
20											
21	Total Disbursements				\$4,314,257.07						
22											
23	Interim Position				\$38,554,741.18						
24											
25	Target Balance				\$11,000.00						
26	Transactions Generated				\$350,000.00						
27											
28	Daily Position				\$38,193,741.18						
29											
30											

Master Eastern Western /

Daily Cash Position Worksheet Populated Data Source: NO Event: NO ADMIN



Sample Cash Position Worksheet 2

ABC Company				
DAILY CASH POSITION WORKSHEET				
24-May-01				
	Concentration			
	Bank	Bank A	Bank B	Total
	(000)	(000)	(000)	(000)
Opening Available Balance	\$ 50	\$ 10	\$ 50	\$ 110
Receipts				
Lockbox Deposits	\$ 1,500	\$ 5,000		\$ 6,500
Wires	10,000			10,000
ACH	4,000			4,000
Anticipated Receipts	500			500
Concentration Transfers	4,910			NA
Total Receipts	\$ 20,910	\$ 5,000	\$ -	\$ 21,000
Total Available Cash	\$ 20,960	\$ 5,010	\$ 50	\$ 21,110
Disbursements				
Controlled Disbursement	\$ 3,000		\$ 2,500	\$ 5,500
Wires	2,000			2,000
ACH	3,500			3,500
Zero Balance Funding	600			600
Anticipated Disbursements	150			150
Funding Transfers	2,550			NA
Total Disbursements	\$ 11,800	\$ -	\$ 2,500	\$ 11,750
Interim Position	\$ 9,160	\$ 5,010	\$ (2,450)	\$ 9,360
Target Balance	\$ 100	\$ 100	\$ 100	\$ 300
Transfer Generated	\$ (9,060)	\$ (4,910)	\$ 2,550	NA



Example of Inter-company Loan Spreadsheet

MicroManagement

File Edit Insert Format Tools Data Navigate Options Window Help

Worksheet Inter Company Loans Detail

	A	B	C	D	E	F	G	H	I	J	K
1	Parent	Child	Start	Maturity	Child	Parent	Day of	ZBA Dr	Outstanding	Rate	Interest
2	Account	Account	Date	Date	Loan Limit	Loan Limit	Month	ZBA Cr	Total		
3	1123091908	1850554682	10/28/95	4/1/01	\$50,000.00	\$750,000.00	Start		1,234.89		
4							10/1/98	47,227.02	48,461.91	0.086	11.58
5							10/2/98	3,557.02	52,018.93	0.086	12.43
6							10/3/98	3,557.02	55,575.95	0.086	13.28
7							10/4/98	3,557.02	59,132.97	0.086	14.13
8							10/5/98	227.02	59,359.99	0.086	14.18
9							10/6/98	8,877.02	68,237.01	0.086	16.30
10							10/7/98	-34,227.02	34,009.99	0.086	8.12
11							10/8/98	-13,527.89	20,482.10	0.086	4.89
12							10/9/98	99,876.15	120,358.25	0.086	28.75
13							10/10/98	99,876.15	220,234.40	0.086	52.61
14							10/11/98	99,876.15	320,110.55	0.086	76.47
15							10/12/98	-3,427.02	316,683.53	0.086	75.65
16							10/13/98	45,007.02	361,690.55	0.086	86.40
17							10/14/98	25,987.11	387,677.66	0.086	92.61
18							10/15/98	595.11	388,272.77	0.086	92.75
19							10/16/98	-6,327.52	381,945.25	0.086	91.24
20							10/17/98	-6,327.52	375,617.73	0.086	89.73
21							10/18/98	-6,327.52	369,290.21	0.086	88.22
22							10/19/98	-3,137.52	366,152.69	0.086	87.47
23							10/20/98	-1,876.54	364,276.15	0.086	87.02
24							10/21/98	1,950.98	366,227.13	0.086	87.49
25							10/22/98	13,557.02	379,784.15	0.086	90.73
26							10/23/98	9,999.99	389,784.14	0.086	93.12
27							10/24/98	9,999.99	399,784.13	0.086	95.50
28							10/25/98	9,999.99	409,784.12	0.086	97.89
29							10/26/98	115.39	409,899.51	0.086	97.92
30							10/27/98	3,557.02	413,456.53	0.086	98.77
31							10/28/98	1,556.31	415,012.84	0.086	99.14
32							10/29/98	1,876.02	416,888.86	0.086	99.59
33							10/30/98	557.02	417,445.88	0.086	99.72

Eastern Region

Inter Company Loans Populated Data Source: NO Event: NO ADMIN



Category Ideas

- Structural organization of company
- Tracking of lockbox availability
- Highlight data of key importance
 - ❖ Government receipts
- Month to date balances
- Funding sources
- Investment destinations



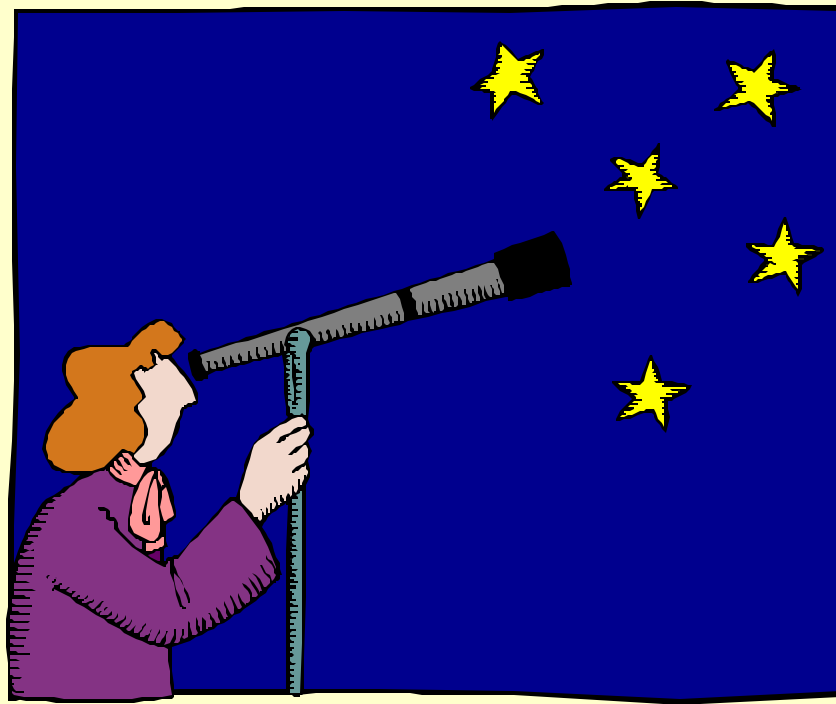
Category Idea Examples

	Conc. Bank	Bank A
LBX Receipts		
Immediate	\$ 200	\$ 500
One Day	1,100	3,500
Two Day	200	1,000
Total	\$ 1,500	\$ 5,000

	Actual	Forecast	Variance
Opening Position	\$ 110	\$ 300	\$ (190)
Total Receipts	21,000	17,000	4,000
Total Disbursements	11,750	12,000	250
Cash Position	\$ 9,360	\$ 5,300	\$ 4,060



Searching for Signs of Intelligent Life

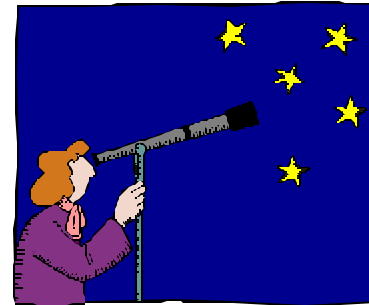


Comerica

HAYES LEMMERZ™
INTERNATIONAL, INC.

What Is Artificial Intelligence?

- Artificial Intelligence is...
 - ❖ The use of a software tool or macro to map data from a printed report or form to a spreadsheet or a data base
- Artificial Intelligence consists of...
 - ❖ Mapping tools
 - ❖ Query tools



Artificial Intelligence Tools

- Export functions of bank systems
- Import functions of bank reporting systems
- Software tools
- Comerica Gateway
- ODBC compliant data bases



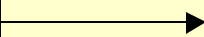


How It Works

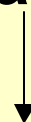
Print Lockbox Report or Create File



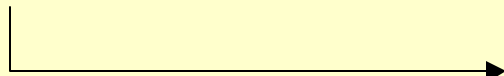
Scan Lockbox Report



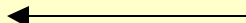
Software Mapping Tool



Software Query Tool



Custom Reports



	Conc.		
	Bank		Bank A
LBX Receipts			
Immediate	\$ 200		\$ 500
One Day	1,100		3,500
Two Day	200		1,000
Total	\$ 1,500		\$ 5,000



Information Which Lends Itself to Artificial Intelligence

- Inquiry (detail transactions on bank accounts)
- Disbursement
- General ledger (day / month)
 - ❖ Spreadsheet mapping
- Foreign exchange
 - ❖ Transactions
 - ❖ Rate conversion
- Lockbox availability tracking
- Bank compensation systems
- Forecast data
- Lending compliance
 - ❖ Days cash on hand
 - ❖ Liquidity covenants



In Closing



Benefits of Hybrid Systems

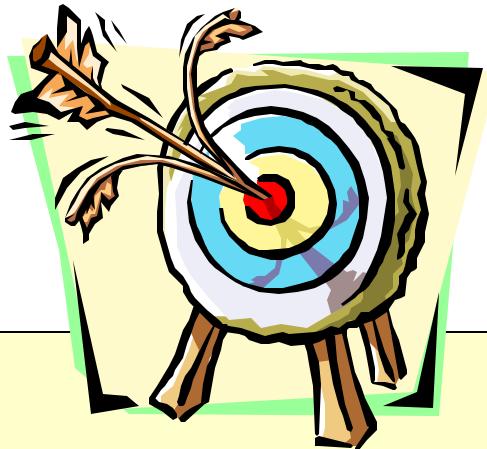


- Cost
 - ❖ Usually the least expensive solution
- Flexibility
 - ❖ Customized to company's business practices
 - ❖ Data usually exportable to any ODBC compliant program
 - ❖ Export capabilities beyond ODBC often available
- Resource needs
 - ❖ Treasury analyst usually has technical expertise required to develop and maintain
 - ❖ Scope determines upfront development & technical expertise
 - ❖ Bank hybrid systems are delivered with significant development and design already completed



One More Benefit...

- Integration
 - ❖ Significant integration with legacy systems such as general ledger and reconciliation can be accomplished with bank & in-house hybrid systems



Disadvantages of Hybrid Systems



- Requires upfront development
- Danger of key person dependency
 - ❖ Expertise may be resident with individual(s) who designed spreadsheet
- Wire transfers may have to be manually entered into each bank system separately
- Technical expertise is necessary to set-up and maintain mapping and reporting
- Results are dependent on skill set & technical expertise of implementation team and ongoing support



Summary & Conclusion

Updating a cash management system:

- ❖ Requires thorough analysis
- ❖ Scope is company specific
- ❖ Opportunity to incorporate best practices
- ❖ Can be done with varying degrees of automation
- ❖ Hybrid systems offer alternatives



Conclusion

The Cash Manager's creativity, experience and expertise is the key to success!

