



Forest Grove
Data-Driven Decision Making

Optimising technology to
unlock insights that drive
better business decisions

Forest Grove Customer Conference 2023

www.forestgt.com.au | info@forestgt.com.au | 1300 559 827



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Data-Driven Decision Making

Optimising technology to
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[D2S8] From spreadsheets to workflows

Presented by :

Clint Bowron - Information and Systems Architect, Royal Flying Doctor Service

About the session:

Innovative multi-data source use of KNIME technology is common throughout the Forest Grove customer base. The team at Royal Flying Doctor Service Western Australia has used KNIME to transition paper and Excel-based processing using the KNIME Web Portal workflow and ETL functionality. The functionality also combines data extracted from banking and unique applications within the business, saving considerable time and manual resources. Information and Systems Architect Clint Bowron will present how his team at RFDS has been applying KNIME throughout their business with outstanding success.

Royal Flying Doctor Service



We are a 94 year old charity that deeply cares about our patients and communities throughout WA.

We have a team of medical clinicians and pilots who are committed to providing the finest care to the furthest corner of WA.

We provide

- Fast, free, and efficient emergency retrievals
- GP health clinics
- Dentistry
- Telehealth
- Medical chests

Our Vital Statistics

In 2022



9,465

patients retrieved

That's 26 patients transferred a day



8.5 million

kilometres flown

The same distance as 2,583 flights from Perth to Sydney!

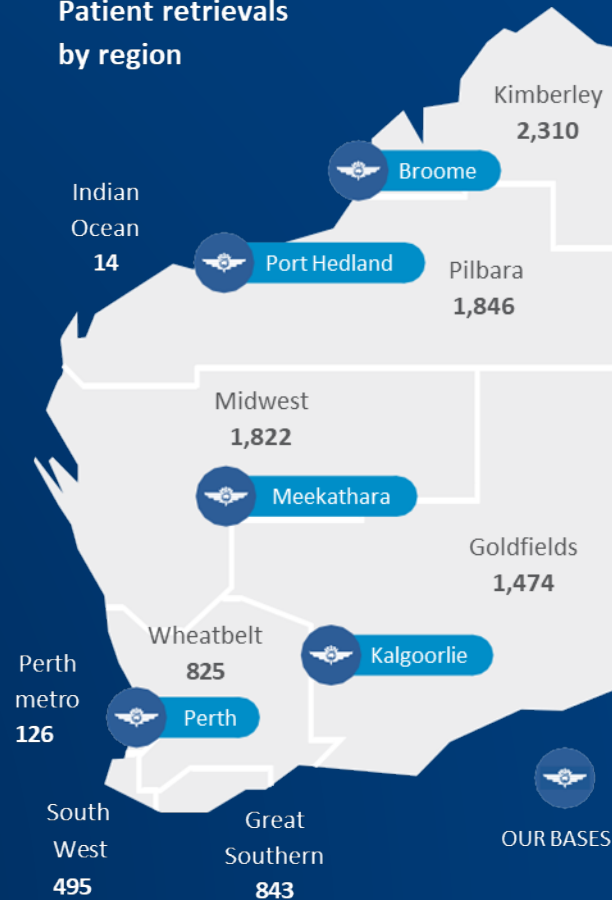


16,375

landings

That's over 44 every day

Patient retrievals by region



Most common reasons for patient retrievals



1 **Injuries** (e.g. vehicle and work accidents, fractures, lacerations, snake bites)



2 **Circulatory** (e.g. heart attack, stroke)



3 **Digestive** (e.g. ulcers, hernia)



4 **Unknown signs and symptoms requiring investigation**



5 **Respiratory** (e.g. pneumonia, COVID-19)



6 **Pregnancy, childbirth and newborns**

Helping the Giving Team

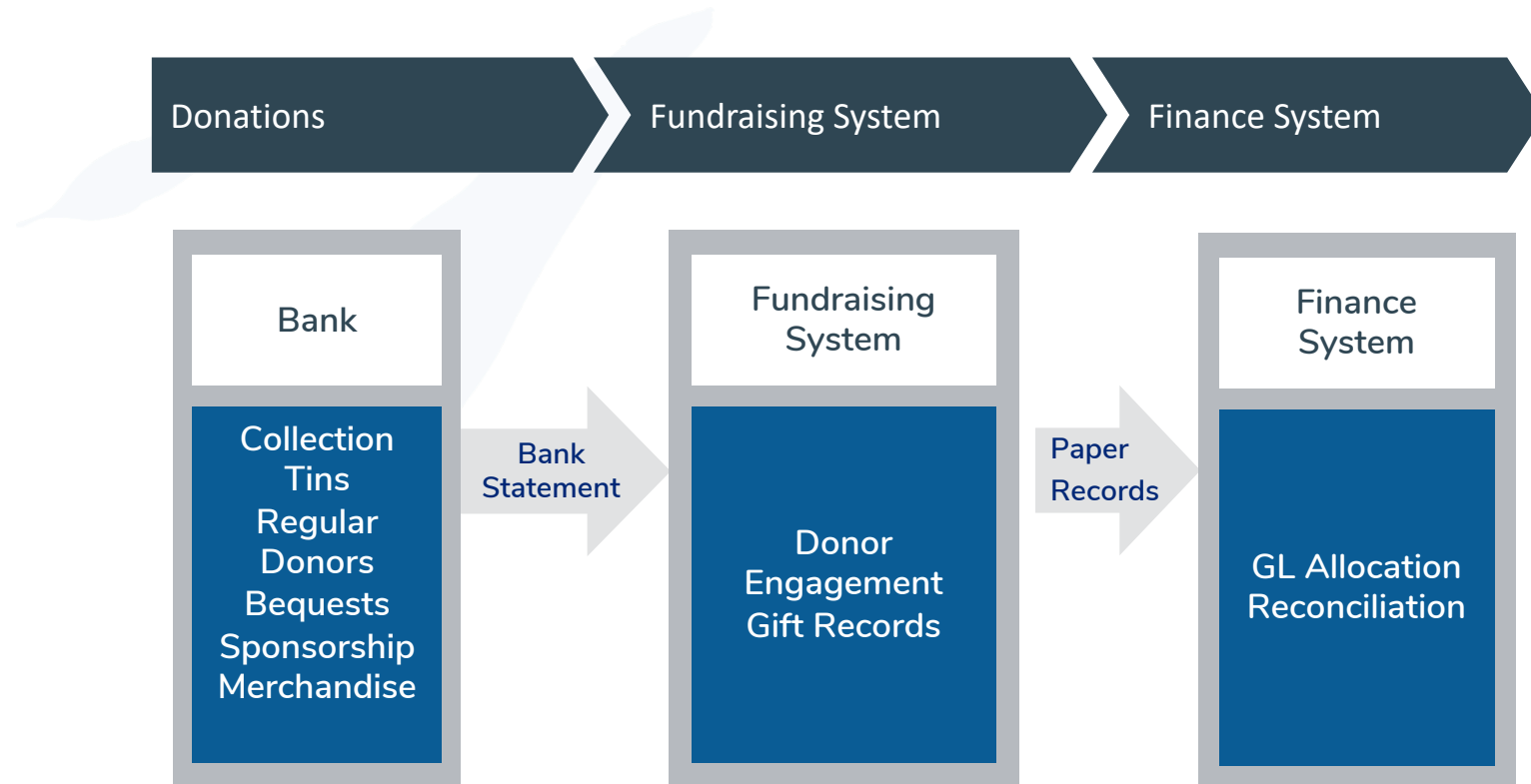
Upgrading the Fundraising Platform

- Decommission 30 year old System
- Upgrade to Cloud Based System
- Streamline processes
- Integrate with Finance



Gift Data Flow

- Initial Task - Automate process to transform Gift Records and upload to Finance System
- Extract and Transform Data from Fundraising System
- Upload to Finance System



Challenges

- The previous paper process provided Bank Statement data (transactions) alongside Gift data

Donation Gift/Batch to Bank Statement record mapping only exists on excel file

	A	B	C	D	E	H	I
1	Date	Description		DB	CR	BATCH	GIFT ID - For one-off gift(s) without batch
143	14/04/2022	S			\$290.65	2022-363	
144	14/04/2022	R			\$10.00	2022-363	
145	14/04/2022	R			\$10.00	2022-363	
146	14/04/2022	S			\$20.00	2022-363	
147	14/04/2022	W			\$40.00	2022-363	
148	14/04/2022	S			\$4.00	2022-363	
149	14/04/2022	B			\$250.16	2022-341	792736
150	14/04/2022	G			\$8,813.91	2022-366	
151	14/04/2022	S			\$1,020.00	2022-363	
152	14/04/2022	W			\$34.30	2022-363	
153	14/04/2022	E			\$75.35	2022-363	
154	14/04/2022	R			\$100.00	2022-363	
155	19/04/2022	R			\$55.00	2022-368	
156	19/04/2022	W			\$13.10	2022-368	
157	19/04/2022	W			\$96.10	2022-368	
158	19/04/2022	W			\$17.80	2022-368	
159	19/04/2022	W			\$19.70	2022-368	

- Fundraising System is not an Accounting System**

Rigour on GST and Totals not guaranteed
Bank Transactions are not recorded

- Finance System requires balance in every record set imported
A \$0 Sum required for Bank Transaction(s) with matched Gift Fund Allocation(s) per date
- Certain processes make Bank Account Reconciliation issues almost certain
Cash Deposits – Process requires gift entry into Fundraising System prior to the monies showing in the Bank
- Only discover Reconciliation issues once records are in Finance System
- The back and forth between teams to resolve Reconciliation issues is time consuming

Challenge #1 – Getting Bank Statement Data

Bank Statement data maintained outside of Fundraising System
Use KNIME WebPortal to allow Giving team to upload Bank Statement File

The screenshot shows the KNIME WebPortal interface for the 'Reconcile Bank Transactions' process. The top navigation bar includes 'WebPortal', 'Monitoring', and 'Administration'. The breadcrumb trail is 'Home > F > Reconciliation > Reconciliation 2022-06-08 00.32.20'. The main heading is 'Reconcile Bank Transactions'. Below the heading, there is explanatory text: 'An xls file of Bank Statement Transactions, where BATCH or GIFTID is noted, will be Financially reconciled. Errors will be highlighted where Bank Transactions dont match lfor'. A bulleted list specifies: '• BATCH or GIFTID', '• Currency Totals', and '• Post dates'. The interface is divided into two sections: 'REQUIRED: Upload XLSX Bank Transaction File' and 'OPTIONAL: Override Bank Account GL Code'. The 'REQUIRED' section has a 'Select file' button and the text 'No file selected.'. The 'OPTIONAL' section has an empty text input field. Below this, there is a checked checkbox for 'OPTIONAL: Refresh Split Gift Records'. At the bottom right, there are 'Cancel' and 'Next' buttons.

Reconcile Bank Transactions

An xls file of Bank Statement Transactions, where BATCH or GIFTID is noted, will be Financially reconciled. Errors will be highlighted where Bank Transactions dont match lfor

- BATCH or GIFTID
- Currency Totals
- Post dates

REQUIRED: Upload XLSX Bank Transaction File

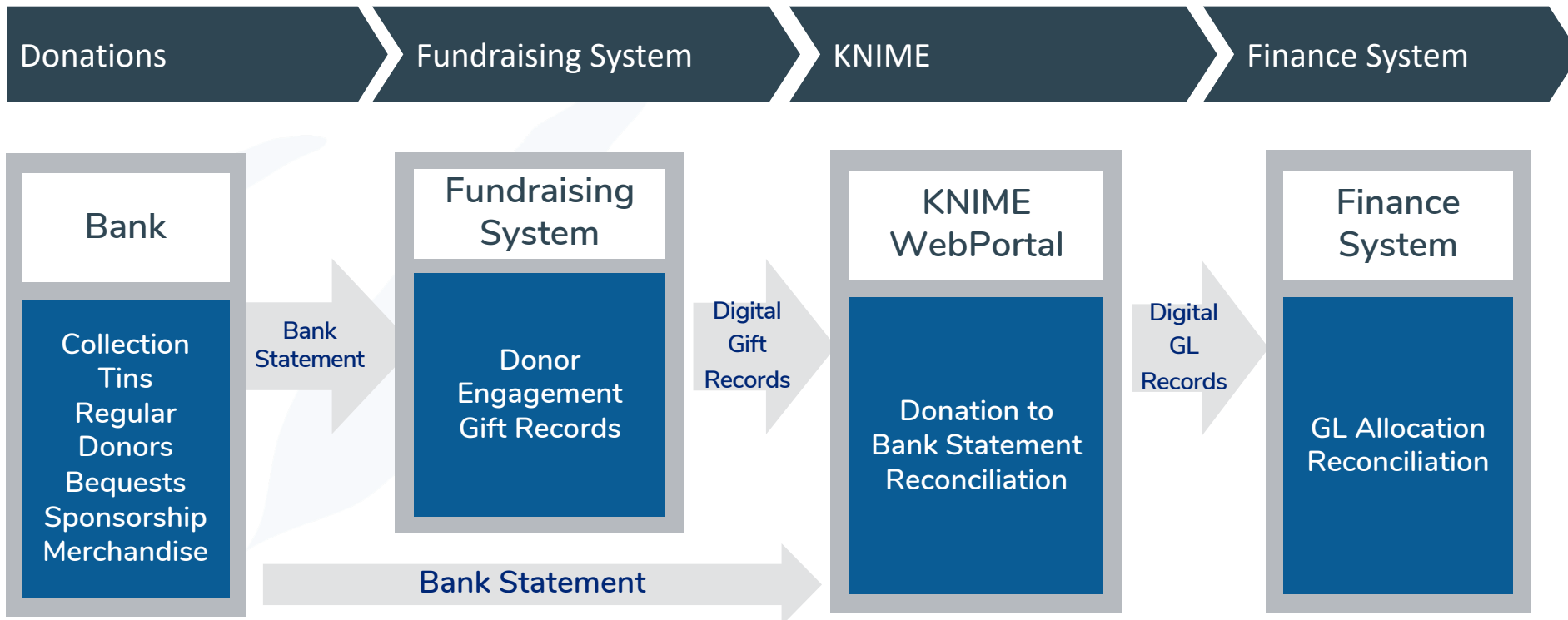
Select file No file selected.

OPTIONAL: Override Bank Account GL Code

OPTIONAL: Refresh Split Gift Records

Cancel **Next**

New Gift Data Flow



Integration – Challenge #2 – Not An Accounting System

- Fundraising System doesn't record Gifts in an Accounting format

GST Values exists but only loosely linked to its source
 GST Values can be altered separate to source value

GiftID	Batch	Date	GiftValue	SplitID	FundAllocation	SplitValue
1	B100	1/05/2022	100	20	Donation	100
2	B100	1/05/2022	22	21	Merchandise	20
				22	GST	2
3	B100	1/05/2022	100	23	Donation	78
				24	Merchandise	20
				25	GST	2

- Use KNIME to Transform Donations into Accounting style records

Gift	Batch	Date	GiftValue	SplitID	FundAllocation	GSTExclusiveValue	GSTValue
1	B100	1/05/2022	100	20	Donation	100	0
2	B100	1/05/2022	22	21	Merchandise	20	2
3	B100	1/05/2022	100	23	Donation	78	0
3	B100	1/05/2022	100	24	Merchandise	20	2

- Display

Challenge #3 – Everything Has to Balance

- Need both the Credits and Debits to make a Balanced Financial Entry
- Join Donations to Uploaded Bank Statement transactions
Donations

Bank Statement Transactions

- Create Balanced General Ledger (GL) records
Batches
Date

Gift	Batch	Date	GiftValue	SplitID	FundAllocation	GSTExclusiveValue	GSTValue
1	B100	1/05/2022	100	20	Donation	100	0
2	B100	1/05/2022	22	21	Merchandise	20	2
3	B100	1/05/2022	100	23	Donation	78	0
3	B100	1/05/2022	100	24	Merchandise	20	2
4	C100	2/05/2022	100	26	Donation	100	0

Date	Description	CR	BATCH
1/05/2022	Bank Transaction #2	222	B100
3/05/2022	Bank Transaction #3	200	C101

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Bank Statement Transactions

- Create Balanced General Ledger (GL) records
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Gift	Batch	Date	GiftValue	SplitID	FundAllocation	GSTExclusiveValue	GSTValue
1	B100	1/05/2022	100	20	Donation	100	0
2	B100	1/05/2022	22	21	Merchandise	20	2
3	B100	1/05/2022	100	23	Donation	78	0
3	B100	1/05/2022	100	24	Merchandise	20	2
4	C100	2/05/2022	100	26	Donation	100	0

Date	Description	CR	BATCH
1/05/2022	Bank Transaction #2		222 B100
3/05/2022	Bank Transaction #3		200 C101

Reference	GL Code	GST Exclusive Amount	GST Amount	Description	Date
B100	12-34-56	222 NA		Bank Transaction #2	1/05/2022
C101	12-34-56	200 NA		Bank Transaction #3	3/05/2022

Challenge #3 – Everything Has to Balance

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Bank Statement Transactions

- Create Balanced General Ledger (GL) records
Batches
Date

Gift	Batch	Date	GiftValue	SplitID	FundAllocation	GSTExclusiveValue	GSTValue
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2	B100	1/05/2022	22	21	Merchandise	20	2
3	B100	1/05/2022	100	23	Donation	78	0
3	B100	1/05/2022	100	24	Merchandise	20	2
4	C100	2/05/2022	100	26	Donation	100	0

Date	Description	CR	BATCH
1/05/2022	Bank Transaction #2	222	B100
3/05/2022	Bank Transaction #3	200	C101

Reference	GL Code	GST Exclusive Amount	GST Amount	Description	Date
B100	12-34-56	222	NA	Bank Transaction #2	1/05/2022
B100	32-21-10	-178	0	Donation	1/05/2022
B100	76-45-32	-40	-4	Merchandise	1/05/2022
C101	12-34-56	200	NA	Bank Transaction #3	3/05/2022
C101	32-21-10	-100	0	Donation	2/05/2022

Challenge #3 – Everything Has to Balance

- Need both the Credits and Debits to make a Balanced Financial Entry
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Bank Statement Transactions

- Create Balanced General Ledger (GL) records
Batches
Date

Gift	Batch	Date	GiftValue	SplitID	FundAllocation	GSTExclusiveValue	GSTValue
1	B100	1/05/2022	100	20	Donation	100	0
2	B100	1/05/2022	22	21	Merchandise	20	2
3	B100	1/05/2022	100	23	Donation	78	0
3	B100	1/05/2022	100	24	Merchandise	20	2
4	C100	2/05/2022	100	26	Donation	100	0

Date	Description	CR	BATCH
1/05/2022	Bank Transaction #2		222 B100
3/05/2022	Bank Transaction #3		200 C101

Reference	GL Code	GST Exclusive Amount	GST Amount	Description	Date
B100	12-34-56	222	NA	Bank Transaction #2	1/05/2022
B100	32-21-10	-178	0	Donation	1/05/2022
B100	76-45-32	-40	-4	Merchandise	1/05/2022
C101	12-34-56	200	NA	Bank Transaction #3	3/05/2022
C101	32-21-10	-100	0	Donation	2/05/2022

Challenge #4 – Make Reconciliation issues accessible

- Give Direct Feedback to Giving team of issues within their own Data

Unmatched Batches Bank Statement Reconciliation Result Export Post Date Errors

Unmatched Batches... Bank Statement Reconciliation Res... Export (csv) Post Date Errors (xlsx)

Bank Statement Reconciliation Result

Show 10 entries

⊗	Reference	Bank: Rows Total	Bank: Rows	Total Unbalanced (\$)	Post Date Issues	Located	Not Located
○	2022-360	624.88	2022-04-22 [REDACTED] YHUd9NB (\$624.88)	8.12	2	BATCH: 2022-360: \$633.0	?
○	2022-300,2022-306,2022-340	1776.7	2022-04-04 [REDACTED] LRXay47o (\$1776.7)	6.95	3	BATCH: 2022-300: \$1116.68(18.32) 2022-306: \$166.97(3.03) 2022-340: \$500.0	?
○	2022-341	250.16	2022-04-14 [REDACTED] LVHtFdVJ (\$250.16)	4.84	3	BATCH: 2022-341: \$235.0 GIFT ID: 792736: \$20.0	?
○	2022-311,2022-316,2022-343,2022-344	825	2022-04-06 [REDACTED] LSJFVaQW (\$825.0)	4.43	3	BATCH: 2022-311: \$435.51(7.49) 2022-316: \$43.92(1.08)	?

← Back Delete this result Close

Challenge #4 – Make Reconciliation issues accessible

- Provide support to assist resolution

Bank Statement Reconciliation Result

Show 25 entries

F1: Reference	Bank: Rows Total	Bank: Rows	Total Unbalanced (\$)	Post Date Issues	Located	Not Located
2022-519	1001.74	2022-05-27 [REDACTED] bQUdd (\$1001.74)	-88.42	1	BATCH: 2022-519: \$913.32(13.68)	?

Refresh

BankDate/PostDate	Bank: Amount(\$) Total	Bank: Summary	RE: Fund Summary	RE: Fund(s) Total	Discrepancy	Mismatched	Bank: BATCH
2022-05-27	1001.74	\$ 1001.74 - [REDACTED] Udd	\$ 927.0/13.680000000000001 - Flying Doctor Day Donation(12)	913.32	88.42	1	2022-519

Showing 1 to 1 of 1 entries

Show 10 entries

lookup_id	post_date	post_status	type	reference	amount	payment_method	GiftTotalFees	split_gift_id	value	description	GSTApplic
795138	2022-05-27	NotPosted	Donation	?	150	CreditCard	1.94	523677	150	Flying Doctor Day Donation	false
795139	2022-05-27	NotPosted	Donation	?	31	CreditCard	0.63	523678	31	Flying Doctor Day Donation	false
795140	2022-05-27	NotPosted	Donation	?	50	CreditCard	0.84	523679	50	Flying Doctor Day Donation	false
795141	2022-05-27	NotPosted	Donation	?	82	CreditCard	1.19	523680	82	Flying Doctor Day Donation	false
795142	2022-05-27	NotPosted	Donation	?	100	CreditCard	1.39	523681	100	Flying Doctor Day Donation	false
795143	2022-05-27	NotPosted	Donation	?	200	CreditCard	2.49	523682	200	Flying Doctor Day Donation	false
795144	2022-05-27	NotPosted	Donation	?	29	CreditCard	0.61	523683	29	Flying Doctor	false

Unmatched Gifts

Show 10 entries

summary	AmountAfterFees	AmountGSTInclusive	FundFees	MinPostDate	MaxPostDate	PostStatus
2022-562: \$100.0	100	100	0	2022-06-01	2022-06-01	NotPosted
795115: \$88.42(1.28)	88.42	89.7	1.28	2022-05-27	2022-05-27	NotPosted
794526: \$40.0	40	40	0	2022-05-13	2022-05-13	NotPosted
2022-545: \$1432.66(20.34)	1432.66	1453	20.34	2022-05-13	2022-05-13	NotPosted
2022-421: \$0.0	0	0	0	2022-05-03	2022-05-03	NotPosted

Outcome

- Data is corrected by the Giving team within Fundraising System
- A balanced Finance File that won't generate reconciliation issues within Finance System

Unmatched Batches Bank Statement Reconciliation Result Export Post Date Errors

Unmatched Batches... Bank Statement Reconciliation Res... Export (csv) Post Date Errors (xlsx)

Bank Statement Reconciliation Result

Show 25 entries

Reference	Bank: Rows Total	Bank: Rows	Total Unbalanced (\$)	Post Date Issues	Located	Not Located
2022-436	5378.77	[REDACTED]	0.0	0	BATCH: 2022-436: \$5378.77(215.23)	?
2022-437	3245.21	[REDACTED]	0.0	0	BATCH: 2022-437: \$3245.21	?
2022-438	2116	[REDACTED]	0.0	0	BATCH: 2022-438: \$2116.0	?
2022-391,2022-440	622.18	[REDACTED]	0.0	0	BATCH: 2022-391: \$573.02(11.98) 2022-440: \$49.16(0.84)	BATCH:
2022-394,2022-441	1561.11	[REDACTED]	0.0	0	BATCH: 2022-394: \$1264.7(17.3) 2022-441: \$296.41(3.59)	?

Continuous Improvement

Benefits of using KNIME WebPortal in a workflow

- Allow staff to trigger and interact with workflow
- Provide direct feedback to staff
- Can show tailored data at the right point in the process
no need to export data and pivot in excel

Still many inefficiencies and improvements that can be made in the process

- Manual Fixes in Finance are still required for Refunds
- Maintaining and uploading Bank Statement via Excel is cumbersome
- A direct means to fix some errors would be great
- Missing ability to selectively create missing Gift Records in the Fundraising System from the Bank Statement

RFDS been using KNIME for a year

Made use of KNIME in a few different ways

Transition paper processes into WebPortal workflows

Automated paper processes into scheduled workflows

ETL of Rostering and Timesheet data to Data Warehouse for analytics

Pushing datasets to PowerBI for close to real time dashboarding