

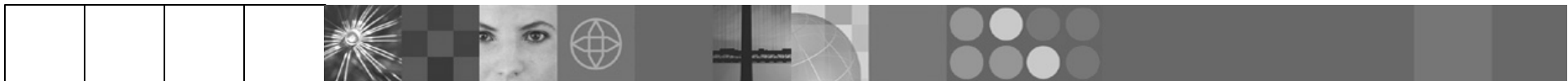
IBM Software Group

# Flight Control – We Have a Problem...E-Notification

*Craig Farney*

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**esf<sup>2</sup>** Inc.  
*ebusiness Solutions to the Next Power*



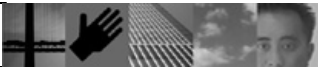
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# Flight Control We Have a Problem...E-Notification

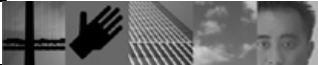
## Agenda

- Reasons why to explore E-Notification
- Benefits of E-Notification
- Stages of E-Notification
- Examples of E-Notification
- Challenges and Opportunities
- Q/A



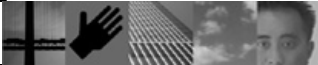
## Reasons Why to Explore E-Notification

- Need a better way to be notified of Production Job / Process Failures ?
- Need to be proactive in reacting to minor failures ?
- Have manual process controls and audits that could be automated ?
- Have Disparate / Multiple systems
- Must deliver information to many people - some may not have access to core systems
- Service Level Agreements (SLA)

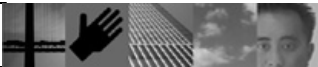
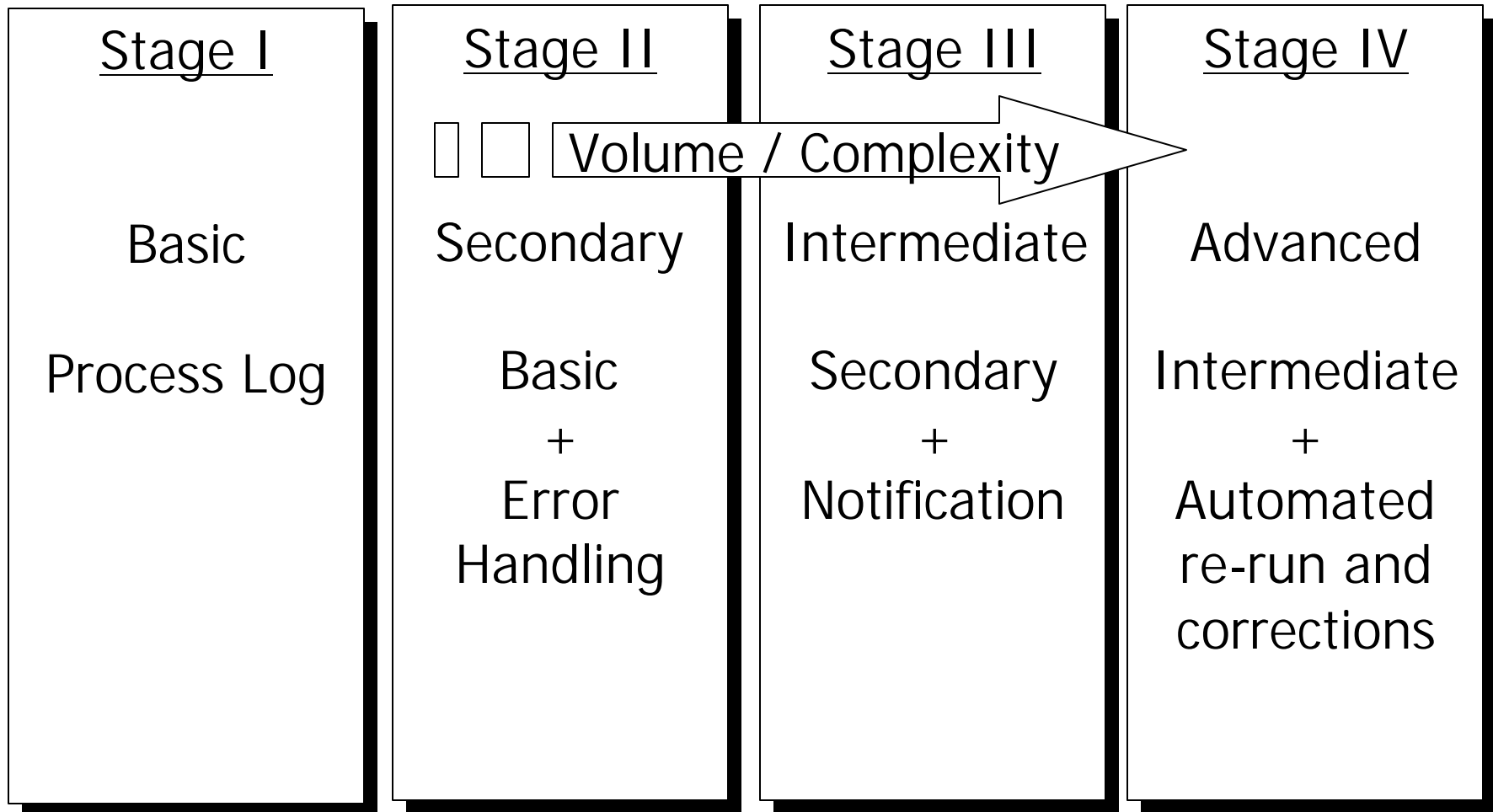


## Benefits of E-Notification

- Proactive instead of reactive
- Provides single interface for problem determination / resolution
- Reduces time needed to solve a problem
- Provides historical audit of system / process events



## Stages of E-Notification

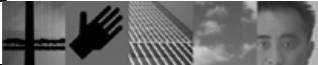


## Examples of E-Notification

### Stage I - Basic

#### **Process Log:**

- Contains Information about each step executed
- Multiple or Single Process Logs
- Provides run statistics / performance metrics
- Documents process flow
- Identifies warnings or errors
- Central Historical repository



## Examples of E-Notification

### Stage I - Basic

#### Process Log Contents:

- Start Date/Time
- Job Step
- Program Name/Description
- Run Statistics
  - # Records processed
  - # Records written
  - ... etc
- Warning / Error messages
- Translator Output (PRTFILE / FFSEXCP)
- End Date/Time

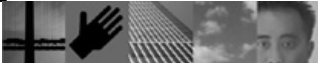


## Examples of E-Notification

### Stage I - Basic

#### Process Log Example:

```
*****  
UNWRAP/CONVERT EDI FILE - FAAL      PROGRAM: E4UNWR02  START DT: 07/23/03  
START TM: 11:06:04 JOB: E4JFARXS (TEST&PROD)  
  
WRAPPED RECORDS READ >              00001337  
HEADER RECORDS DROPPED >            00000007  
INTERCHANGES PROCESSED >           00001026  
UNWRAPPED RECORDS WRITTEN >         00009290  
  
UNWRAP/CONVERT EDI FILE - FAAL      PROGRAM: E4UNWR02  END DT: 07/23/03  
END TM: 11:06:06 RECS PROC: 1337 RETN CODE:0000
```



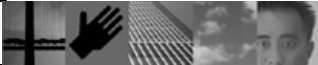


## Examples of E-Notification

### Stage II – Secondary

#### **Error Handling:**

- Controls process flow by using condition codes
- Execute / bypass steps when certain conditions exist
- Utilizes basic O/S features
- Can be written to Process Log

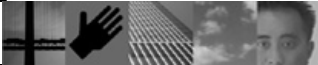


## Examples of E-Notification

### Stage II – Secondary

#### **Error Handling Techniques:**

- **Set Condition Code in Programs**
  - If Trading Partner not found, set code to 1
  - If Invalid Data, set code to 2
  - If x, set code to y
  
- **Utilize Translator-Generated Condition Codes**
  - If Map Not Found, bypass communications
  - If Missing Mandatory Element, continue and Log Error
  - If Condition Code < 4, Successful Translation!
  
- **If Condition Code > x, perform or do not perform next step**
  
- **Add to Process Log during each step**

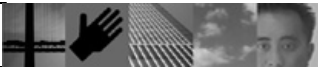


## Examples of E-Notification

### Stage III – Intermediate

#### Notification:

- Expands reach of Process Log
- Increase reaction time – know about it w/o having to look at Process Log
- Do not have to be a programmer to find out what happened
- Can supply more detailed and customized content – programming
- Can be expanded to deliver other information – reports, etc...

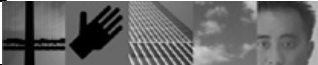


## Examples of E-Notification

### Stage III – Intermediate

#### Notification Techniques:

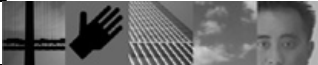
- Add processes that are dedicated to notification
- Execute notification processes when certain conditions exist
  - If Condition Code = x, execute notification process step 1
  - If Condition Code < y, execute notification process step 2
- Execute notification processes before or after certain process steps
  - After Translation step, send email
  - Upon completion, send email
- Programs can be used to generate content of notification
  - Error Messages
  - Status Reports
  - Generate process statistics
  - 997 Reports / Late Notices
  - Interrogate DI PRTFILE for Translation Errors



## Examples of E-Notification

### Stage III – Intermediate

- **Forms**
  - Email
  - Paging
  - Console / operator messages
  - Instant Messages
  - On-Line Application to view Process Notifications
  
- **Components**
  - Email Control File
  - Trading Partner Control File



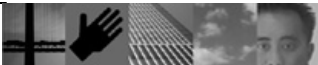
## Examples of E-Notification

### Sample Email Error Message:

A non-zero return code has been issued by job E4JLBXTS

Please review each non-zero job step to determine if this is just a warning or an actual error.

Thank You!

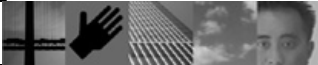


## Examples of E-Notification

### Sample Email Status Report:

Following are the summary totals and dollars by trading partner:

Partner Name	Total Invoices	Total	Status
BANK OF AMERICA	76	\$205,620.44	ACCEPTED
GENERAL MOTORS	18	\$152.25	ACCEPTED
FORD	20	\$1,135,077.27	ACCEPTED
TOTAL ACCEPTED----->	114	\$1,340,849.96	
TOTAL REJECTED----->	0	\$ .00	



## Examples of E-Notification

### Sample 997 Late Notice:

ATTENTION: GENERAL MOTORS

Our records indicate the following Functional Acknowledgements (FA997s) have not been received for the invoice (811) transactions.

If you have not retrieved your invoices within the last 7 days please do so. Should you be experiencing any problems, please contact us. We will be happy to assist you.

-Invoices sent on May 22, 2003

ISA/GS CONTROL NUMBERS:	231
TOTAL NO INVOICES SENT:	1
COMMUNICATIONS METHOD:	FTP
MONTH:	May 2003





## Examples of E-Notification

### Sample DI PRTFILE error program:

Do Until EOF

Read DI PRTFILE

If pos 10 = 'Message:'

    potential error

    if pos 15 not = TR0401 or

        VN1040 or

        VN1043 or

        VN1045 or

    no error

    else

        write error message and code to Process Log

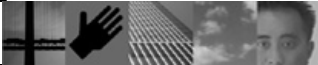
        set program condition code = 1

    end-if

End-if

End Do

END-PROGRAM



## Examples of E-Notification

### Sample JCL for DI PRTFILE error program:

Do Until EOF

Read DI PRTFILE

If pos 10 = 'Message:'

    potential error

    if pos 15 not = TR0401 or

        VN1040 or

        VN1043 or

        VN1045 or

    no error

    else

        write error message and code to Process Log

        set program condition code = 1

    end-if

End-if

End Do

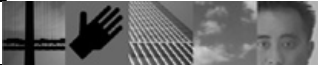
END-PROGRAM



## Examples of E-Notification

### Sample Email Control File:

01	EMCNTL-REC.	
02	EMCNTL-KEY.	
05	EMCNTL-RECORD-ID	PIC X(20).
05	EMCNTL-RECORD-SEQ	PIC 9(9).
02	EMCNTL-EMAIL-ADDRESS	PIC X(50).
02	EMCNTL-THE-REST-GEN.	
05	EMCNTL-PARTNER-NAME	PIC X(30).
05	EMCNTL-ISA-ID	PIC X(15).
05	EMCNTL-BILLING-SYSTEM	PIC X(4).
05	EMCNTL-REPORT-NAME	PIC X(20).
05	FILLER	PIC X(52).



## Examples of E-Notification

### Sample Trading Partner Control File:

```

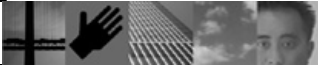
01 TPCNTRL-REC.
  02 TPCNTRL-KEY.
    05 TPCNTRL-NAME PIC X(30).

    02 TPCNTRL-COMM-METHOD PIC X(3).
      88 TPCNTRL-CD VALUE 'CDR'.
      88 TPCNTRL-DIRECT-CONNECT VALUE 'DIR'.
      88 TPCNTRL-EMAIL VALUE 'EML'.
      88 TPCNTRL-FTP VALUE 'FTP'.
      88 TPCNTRL-VAN VALUE 'VAN'.

  02 TPCNTRL-PTNR-EMAIL-ADDRESS PIC X(35).

  02 TPCNTRL-SEND-FILE-READY-EMAIL PIC X(01).
  02 TPCNTRL-997-LATE-EMAIL PIC X(01).
  02 TPCNTRL-STATUS PIC X(01).
    88 TPCNTRL-ACTIVE VALUE 'A'.
    88 TPCNTRL-INACTIVE VALUE 'I'.
  02 TPCNTRL-INACTIVATE-DATE PIC X(06).

```

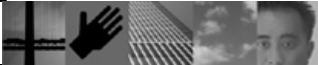


## Examples of E-Notification

### Stage IV – Advanced

#### **Automated re-run and corrections:**

- Reduces human intervention – can reduce errors
- Increase reaction time – problems can be addressed before someone gets around to looking at it
- Improved Customer Service – Process data more quickly and comply with Service Level Agreements

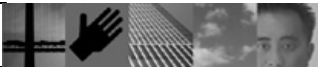


## Examples of E-Notification

### Stage IV – Advanced

#### **Automated re-run and correction Techniques:**

- Write invalid or incomplete data to a 'recycle' file
- Send email containing details of what was recycled and why
- Process 'recycle' file during normal process runs
- When data has been corrected it will be processed next run
- Send email when 'recycle' file has been successfully processed
- Uses Email and Trading Partner Control files



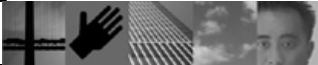
## Examples of E-Notification

### Sample Recycle Email Notification:

The FTP processing for JUL03 had rejected transactions do to incomplete FTP Setup. The following FTP files were placed on hold:

E4.P.EDIFTP.JUL03.T133251.T05

E4.P.EDIFTP.JUL03.T133251.T93



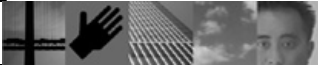
## Examples of E-Notification

### Sample Re-run Email Notification:

The FTP reprocessing job E4JEFTPS released the following files from FTP hold and distributed them as follows:

E4.P.EDIFTP.JUL03.T133251.T05 - sent to FTP server.

E4.P.EDIFTP.JUL03.T133251.T93 - sent to FTP server.

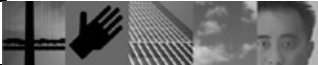




## Challenges and Opportunities

### Challenges:

- Fine line between too much, and too little information –  
Do not want an Email System that also does EDI
  
- Need to communicate the right information to the right people  
Various levels of detail  
Internal communications vs. External communications
  
- Need to communicate the right information to the right people



# Questions & Answers

