By Peter Heinrich
October 1975

INTRODUCTION

HISTORY, SIZE AND SCOPE OF CP-V

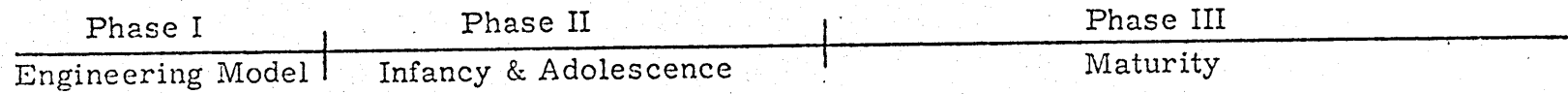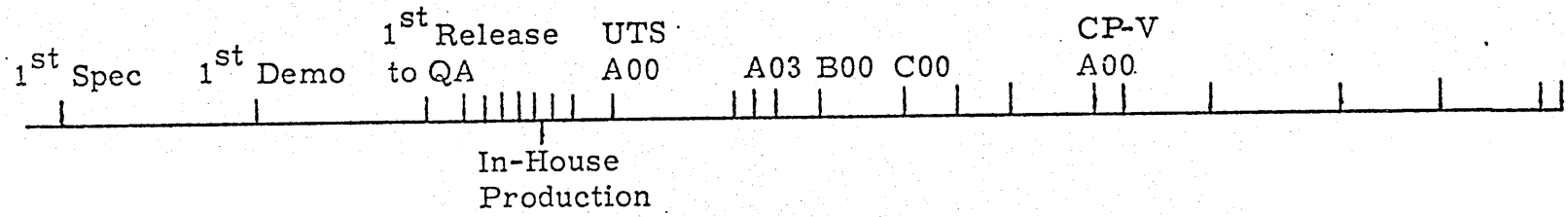
PROBLEMS AND RESPONSES

CONCLUSION
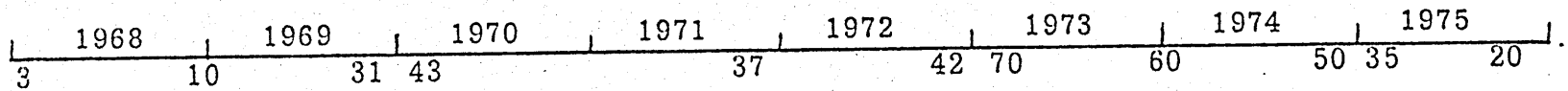
PHASE I	3/68	1ST FUNCTIONAL SPEC
ENGINEERING	12/68	ONE USER, LIMITED FUNCTION
MODEL	4/69	MULTIPLE USER DEMO

PHASE II	2/70	INTEGRATED SYSTEM TO QA
INFANCY	9/70	IN-HOUSE PRODUCTION USE
&	1/71 (A00)	1ST CUSTOMER SHIP
ADOLESCENCE	11/71 (A03)	SYSTEM STABLE, 6-10 CUSTOMERS

	2/72 (B00)	1ST FUNCTION RICH, HIGH PERFORMANCE SYSTEM
PHASE III	6/72 (C00)	START CONSISTENT, STABLE, ON-SCHEDULE RELEASES
MATURITY	1/73	XDS CANCELLED, UTS RENAMED CP-V

1st Spec   1st Demo   1st Release to QA   UTS A00   A03 B00 C00   CP-V A00

In-House
Production

Phase I   Phase II   Phase III

Engineering Model   Infancy & Adolescence   Maturity

1968   1969   1970   1971   1972   1973   1974   1975

Head
Count

3   10   31   43   37   42   70   60   50   35   20

SIZE AND SCOPE

o   CP-V SIZE

450,000 SOURCE LINES OF CODE

350 MODULES

28-35,000 WORDS RESIDENT MONITOR

o   DOCUMENTATION

10 MANUALS

$\approx$ 2000 PAGES

o   DIFFICULTY REPORTS

$\approx$10,000 TOTAL

$\approx$180 PER MONTH INCOMING

$\approx$200 PER MONTH CLOSED

o   MISCELLANEOUS

$\approx$100 UTILITY PROGRAMS AND JOBS

o   COST

$\approx$300 MAN YEARS

o   PRODUCTIVITY

$\approx$1500 LINES OF CODE PER MAN YEAR

PROBLEM AREAS

RELEASE ACTIVITY - CP-V

	A00	B00	C00	C01	D00
TOTAL SYSTEM LINES OF CODE (, 000)	237	365	343	352	425
UPDATE LINES OF CODE (, 000)*	40	63	103	77	57
TOTAL # MODULES	290	-	3ɔ9 ·	338	400
# MODULES UPDATED (%)	200 (70)	-	252 (75)	291 (85)	245 (60
DIFFICULTY REPORTS CLOSED WITH CODE	325	400	402	400	

PROBLEM AREAS

o   INEXPERIENCE

o   GOALS AND REQUIREMENTS

o   COORDINATION/COMMUNICATION

----

o   TESTING

o   DOCUMENTATION

o   TRAINING

INEXPERIENCE

o UNREALISTIC ESTIMATES

o COMPLEXITY OF INTEGRATING SYSTEM PRODUCT

o RECOGNIZING CHANGE OF SCOPE

o IMPORTANCE OF COMMITMENTS

GOALS AND REQUIREMENTS

o   UNCONTROLLED DEMANDS FOR FEATURES

o   MISUNDERSTANDING BETWEEN DEVELOPMENT
AND MARKETING

o   NO OVERALL PRODUCT GOALS

- IMMEDIATE SALES OPPORTUNITY DRIVEN

- CUSTOMER CRISIS DRIVEN

COORDINATION/COMMUNICATION

o   INTEGRATION OF 5-10 FEATURES

o   COORDINATING: FIXES

                       NEW FEATURES

                       SUBSEQUENT RELEASES

o   MAINTAINING DESIGN INTEGRITY

o   INTERACTION WITH OTHER DEVELOPMENT
    GROUPS

WHAT NEW SOFTWARE TOOLS CAN DO FOR US

o   IMPROVE CONFIDENCE IN ESTIMATES

o   GIVE GREATER VISIBILITY INTO PROGRESS

o   ENHANCE RELIABILITY AND QUALITY OF THE
    PRODUCT

o   DECREASE LIFE CYCLE COSTS

o   IMPROVE ABILITY TO MEET CONSERVATIVE
    SCHEDULES