A DIFFERENT PARADIGM FOR HIGH TECH STARTUPS

BJT Amplifier Design

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AND

LINEARIZER TECHNOLOGY, INC.
OUTLINE

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   – HOW LTI STARTED
2. STARTUP STRATEGIES
3. LTI HISTORY
4. LINEARIZATION
   – IMPORTANCE
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GETTING STARTED

1990 PAUL ANDREWS – GE AMERICOM
EVALUATE GROUND STATION LINEARIZERS
DEMONSTRATION LINEARIZER
RCA ASTRO’S OK

1991 LTI INCORPORATED

NOW >20 YEARS
STARTUP STRATEGIES

• COME UP WITH AN IDEA
• WRITE A BUSINESS PLAN
• ATTRACT INVESTMENT $$$
• SETUP BUSINESS
• WATCH BURN RATE ($$$OUT - $$$IN)
• SELL BUSINESS
LTI STRATEGY

HAD IDEA & PLAN

INVEST MINIMUM $$$

ATTRACT RIGHT PEOPLE

ENGINEERING

MANUFACTURING

SALES

LEGAL/FINANCIAL

FIND CUSTOMERS & START PRODUCTION

BUILD BY BOOTSTRAP METHOD

- STUDENTS KEY TO SUCCESS
RIGHT PRODUCT AT THE RIGHT TIME

- INFORMATION TRANSMISSION RATE (IR) TOO LOW FOR NEW APPLICATIONS

- \( IR \geq BW[1 + \log_2(S/N)] \)

- LIMITED BY BANDWIDTH (BW)

- \( S/N \Rightarrow \text{BIG SIGNAL & LOW NOISE + INTERFERENCE (DISTORTION)} \)
AMPLIFIERS OPERATED @ REDUCED LEVEL

LINEARIZATION USED TO OBTAIN HIGH POWER, LINEARITY & EFFICIENCY
PREDISTORTION LINEARIZATION

GENERATE OPPOSITE PHASE & MAGNITUDE TO PA

BOTH ANALOG & DSP LINEARIZATION USED
LINEARIZER 2 TONE IMPROVEMENT

>30 DB REDUCTION IN IMD AT 3 DB FROM SATURATION OF LDMOS SSPA
LTI TODAY

EVOLVED IN 3 COMPANIES: LTI, LPL & LST

MANUFACTURER OF HIGH TECH DISTORTION CORRECTION AND SIGNAL PROCESSING EQUIPMENT FOR COMMUNICATION, BROADCAST, GOVERNMENT, AND SATELLITE INDUSTRIES.

- ADVANCED LINEARIZATION EQUIPMENT
- FIBER OPTIC COMMUNICATIONS EQUIPMENT
- SPACE FLIGHT COMMUNICATIONS HARDWARE
Key Personnel

Dr. Allen Katz
President

Roger Dorval
VP of Engineering

Eugene Hoffman
VP Quality Production Assembly
GM MEA Operations

John MacDonald
Director of LST
VP/GM Linear Photonics

Michelle Rybinski
Comptroller

Therese Ulrich
Marketing Manager

James E. Dragone
Product Lead of Microwave Productions

Dr. Allan Guida
System Analysis

Robert Gray
Product Lead of Millimeter Wave Products
CONCLUSION

SHOWN ALTERNATE MODEL FOR STARTING UP A HIGH TECH COMPANY

- RIGHT PEOPLE
  (HAVING EXCELLENT STUDENTS HELPS)
- RIGHT PRODUCT
  (FOCUSED ON SMALL/SPECIAL)
- RIGHT ATTITUDE
  (SERVICE TO THE CUSTOMERS)
- RIGHT LUCK