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The Impact Of New Communication Technologies
On The Broadcasting Environment In Asia

By

Thomas van der Heyden
THE IMPACT OF NEW COMMUNICATION TECHNOLOGIES ON THE BROADCASTING ENVIRONMENT IN ASIA

Presented By

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“TECHNOLOGY” IS MAN’S MOST POWERFUL TOOL BY WHICH HE ADAPTS TO THE ENVIRONMENT.

“ADAPTING TO THE ENVIRONMENT” IN THE PAST HAS FOCUSED ON THE NECESSITIES OF NOURISHMENT AND SHELTER.

“ADAPTING TO THE ENVIRONMENT” TODAY MEANS ADAPTING TO THE EVER SHRINKING WORLD WE LIVE IN, ADAPTING TO THE GLOBAL VILLAGE.

THE TECHNOLOGICAL MEANS BY WHICH INFORMATION DELIVERY IS CARRIED OUT TODAY AND TOMORROW -- THE WAY WE ADAPT TO THIS EVER SHRINKING WORLD WE LIVE IN -- IS THE FOCUS OF TODAY’S PRESENTATION.
SATellite Broadcast Technology

The "Digital Revolution" & Compression

Application Specific Integrated Circuitry

Receiver Technology

Security; Encryption, Coding, Scrambling

The Future of Television Broadcasting

The Future of Radio Broadcasting

Indostar Television and Radio DBS Satellite

Closing Comments
✓ SMALLER, BIGGER, FASTER CONSTRUCTION, MORE CHANNELS, MORE FREQUENCIES, MORE POWERFUL, MORE RELIABLE, LONGER LIVED, ....

✓ 90% DESIGNED FOR GENERAL TRANSMISSION VIA THE "BENT-PIPE" APPROACH. NEW PROGRAMS LOOKING FORWARD TO LOW EARTH ORBIT CONSTELLATIONS OF FROM 18 TO 900 SATELLITES.

✓ INNOVATION FOCUSED ON RELIABILITY, WEIGHT, AND ANTENNA TECHNOLOGY.

✓ IN AEROSPACE WEIGHT = MONEY. EXAMPLE, IT COSTS FROM US $15,000 TO US $27,000 TO LAUNCH ONE KILOGRAM INTO GEOSTATIONARY ORBIT.
HIGHER POWER TRANSPONDERS, OPERATING IN FREQUENCY BANDS ALLOCATED SPECIFICALLY FOR BROADCASTING, PROVIDE FOR INEXPENSIVE RECEPTION BY REDUCING THE SIZE AND COMPLEXITY OF RECEIVER TECHNOLOGY.

SATELLITES DESIGNED FOR TELEVISION BROADCASTING ARE USING TRANSMISSION AMPLIFIERS 10 AND 20 TIMES MORE POWERFUL THAN JUST A FEW YEARS AGO.

THE ABILITY TO GENERATE AND MANAGE GREATER AMOUNTS OF ON-ORBIT POWER, THROUGH THE INCREASED EFFICIENCIES OF SOLAR POWER GENERATION AND HIGH POWER AMPLIFIERS HAS DRAMATICALLY INCREASED THE AVAILABLE COVERAGE AREA AND BROADCAST POWER OF SATELLITES.
Digital signal encoding/decoding and digital transmission has increased the quality of the transmitted signal while reducing the cost of transmission.

Digital signal encoding allows for error correction of the broadcast signal, thus permitting affordable high definition television and CD quality radio via satellite.

Digital technology provides the basis for signal compression, a relatively new technology which multiplies the effective number of channels a given satellite transponder can broadcast while at the same time ensuring the highest quality.
ASIC TECHNOLOGY

✓ APPLICATION SPECIFIC INTEGRATED CIRCUITRY, OR "ASIC" TECHNOLOGY IS THE RECEIVER BASED TECHNOLOGY THAT PERMITS THE DRASTIC REDUCTION IN COST OF MASS PRODUCED CONSUMER ELECTRONIC GOODS, AND THUS IMPROVES THE AFFORDABILITY OF TELEVISION AND RADIO RECEIVERS.

✓ "ASIC" TECHNOLOGY REDUCES THE NUMBER OF COMPONENTS A CONSUMER ELECTRONIC ITEM REQUIRES BY INTEGRATING MANY COMPONENTS, WHICH ARE CARRYING OUT MANY DIFFERENT FUNCTIONS, INTO ONE INTEGRATED CIRCUIT - "IC".

✓ ASIC TECHNOLOGY IMPROVES RELIABILITY, REDUCES PRODUCTION AND TEST COST, AND REDUCES POWER REQUIREMENTS.
RECEIVER TECHNOLOGY CONSISTS OF SEVERAL MAIN COMPONENTS; ANTENNA, LNA, IFL, DEMODULATOR, DECODER, VIDEO AND AUDIO CIRCUITS, AND UNIT CONTROL.

THE APPLICATION OF MICRO-PROCESSORS, DIGITAL CIRCUITRY AND ASIC TECHNOLOGY TO ALL ACTIVE COMPONENTS OF A RECEIVER PROVIDE FOR LOWER COST, HIGHER QUALITY AND MORE FLEXIBLE RECEIVERS.

THE COST (NOT PRICE) FOR A SATELLITE RECEIVER OF ANALOG BROADCASTS IS AS LOW AS US $50 TO $60 DOLLARS WITHOUT ANTENNA.

THE COST OF DIGITAL, ENCRYPTED, HIGH DEFINITION QUALITY TELEVISION RECEIVERS WILL BE AS LOW AS US $300 BY 1997 (WITH ANTENNA).
DIGITALLY CODED AUDIO AND VIDEO SIGNALS CAN BE EFFECTIVELY ENCRYPTED MAKING RECEIPTION BY THE UNAUTHORIZED RECEIVER FINANCIALLY IMPOSSIBLE.

ENCODING PROVIDES FOR ACCESS CONTROL AND THUS AFFORDS THE ABILITY TO ELECTRONICALLY CLEAN UP THE "MUDDY BOARDERS" DISCUSSED IN YESTERDAY'S SESSION.

ENCODING CAN PROVIDE AN ABSOLUTE METHOD FOR TAX REVENUE COLLECTION VERSUS THE EXISTING METHOD STILL IN USE BY MANY COUNTRIES WHICH OFTEN COSTS MORE TO IMPLEMENT THAN IT COLLECTS.

ENCODING PROVIDES THE ABILITY TO ESTABLISH CULTURAL CURTAINS; NOT CULTURAL BARRIERS.
FUTURE TELEVISION IS ALREADY HERE

✓ HIGHER QUALITY PICTURES THROUGH DIGITAL CODING AND SIGNAL PROCESSING.

✓ INCREASED NUMBER OF CHANNELS IN THE SAME SPECTRUM THROUGH DIGITAL COMPRESSION.

✓ INCREASED CONTROL OVER VIEWED MATERIAL THROUGH INDIVIDUAL CHANNEL CONTROL - ACCESS CONTROL (BOTH AT HOME AND BY BROADCASTING SYSTEM).

✓ WORLD WIDE COVERAGE OF AFFORDABLE TELEVISION, WITH AFFORDABLE BEING DEFINED LOCALLY.
FUTURE RADIO IS ALREADY HERE

DIRECT TO RECEIVER FROM SATELLITE AUDIO

EIGHT DBS DIGITAL RADIO SYSTEMS ARE IN PLANNING OR IN CONSTRUCTION WORLD WIDE.

HIGHER QUALITY SIGNALS (CD QUALITY) THROUGH DIGITAL CODING AND SIGNAL PROCESSING.

INCREASED NUMBER OF CHANNELS IN THE SAME SPECTRUM THROUGH DIGITAL COMPRESSION.

WORLD WIDE COVERAGE WITH AFFORDABLE RADIO. WITH AFFORDABLE BEING DEFINED LOCALLY.

SHORT-WAVE RADIO HAS SEEN ITS LAST DAYS.
TODAY'S BROADCAST TECHNOLOGY PROVIDES THE MEANS BY WHICH ALL COUNTRIES CAN AFFORDABLY ENHANCE THEIR ABILITY TO PROVIDE AN IMPROVED AND AFFORDABLE "INFORMATION UTILITY".

TO IMPROVE A COUNTRY'S ECONOMIC FUTURE IT MUST IMPROVE ITS HUMAN RESOURCES FIRST, A TASK WHICH DEMANDS THE DEVELOPMENT AND DISSEMINATION OF INFORMATION.

WHILE TECHNOLOGY CAN SUPPORT REGULATORY CONTROLS, IT IS MORE APPROPRIATELY APPLIED TOWARD IMPROVING THE AFFORDABILITY AND VARIETY OF INFORMATION.

ADVANCES IN BROADCAST TECHNOLOGY SUPPORTS THE GOAL OF MAINTAINING ONE'S HERITAGE WHILE LEARNING FROM OTHERS.
ADVANCES IN BROADCAST TECHNOLOGIES PROVIDE POWERFUL TOOLS BY WHICH GOVERNMENTS CAN ACCOMPLISH THE NATIONAL GOAL OF IMPROVING THE STANDARD OF LIVING FOR ALL CITIZENS AND THE ECONOMIC ADVANCEMENT OF THEIR NATION, WHILE AT THE SAME TIME MAINTAINING NATIONAL HERITAGE AND HARMONY.

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IT IS THE WISE AND TEMPERED APPLICATION OF TECHNOLOGY, PROPERLY TIMED AND CONTAINING APPROPRIATE PROGRAMMING CONTENT, WHICH WILL PROVIDE THE VEHICLE BY WHICH THE NATIONS OF THE FUTURE WILL DETERMINE THEIR PLACE AT THE FINISH LINE IN THE GLOBAL ECONOMIC RACE WE ARE ALL PARTICIPATING IN.
CONCLUSION

BHONEKA TUNGAL IKA

"UNITY IN DIVERSITY"

There is room for all when all act for the benefit of the whole, not the individual.
THE FUTURE OF INDONESIA’S TELEVISION AND RADIO BROADCAST

- IN 1996 INDONESIA WILL LAUNCH INDOSTAR-I, THE FIRST DIRECT BROADCAST (DBS) SATELLITE IN SOUTHEAST ASIA, ON AN ARIANE ROCKET INTO GEOSTATIONARY ORBIT ABOVE INDONESIA.
- INDOSTAR-I WILL HAVE 20% OF ITS CAPACITY DEDICATED TO PUBLIC BROADCASTING FREE OF COST TO THE GOVERNMENT.
- INDOSTAR-I WILL USE DIGITAL COMPRESSION, DIGITAL ACCESS CONTROL, HIGH POWER BROADCASTING AND LIGHTSAT TECHNOLOGY.
- INDOSTAR-I WILL HAVE BETWEEN 32 AND 40 CHANNELS OF TELEVISION PROGRAMMING RECEIVED WITH A 70 cm. ANTENNA.
- FUTURE INDOSTAR SATELLITES WILL INCORPORATE L-BAND DIRECT BROADCAST DIGITAL RADIO BROADCASTING.
- THE INDOSTAR PROGRAM HAS FOUR ITU ORBITAL SLOTS WITH OVERALL ARCHITECTURAL GROWTH CAPABILITY TO 200 TELEVISION CHANNELS AND 133 "CD" RADIO CHANNELS.
- INDOSTAR IS 100% PRIVATELY FUNDED AND DEMONSTRATES AN EFFECTIVE MARRIAGE BETWEEN PUBLIC INTEREST BROADCASTING AND COMMERCIAL "FOR PROFIT" BROADCASTING.