APR - 7 1981

10 year plan assumptions
Please let me free associate & not take "last year" too strictly.

If your turf is just technical factors that influence technical strategy I'm hard put to bring up much more than the solidification of genetic technologies for commercial purposes. (Opportunity — and threat [competition].)

Cf. possible advances in toxicological science.... see below

Still more automation in industrial processes with cheap mainframe processors. Can production plants be designed and built to be more flexible re product choices?

Catalysis only starting to be rational science.
Can we look forward to better theoretical understanding of polymer characteristics in re fiber design?

Demographic + consumer economic issues. (1)
Loss of real personal income in wake of OPEC.
Aging population
Immigration issues

Env - regulatory climate
(I expect deceleration more than reversal except some areas with wide economic impact like Clean Air.

Maybe advances in scientific toxicology that may improve rational response to threats of environmental toxicity. This may aggravate impact on some existing markets and production methods but should improve climate of innovation.

Transnationals entering US markets
More competition from foreign giants, developing countries.
Trade wars?

Personal Papers of
JOSHUA LEDERBERG

More broadly
feedstock issues:
gas ↑ coal ↓ ??

Persian gulf oil — our strategic vulnerability. Afghanistan. Iraqi-Iran war. How much do you bet there won't be an interruption at Hormuz?

U.S. economy
cost of capital
federal re-industrial policy
defense mobilization

Risks of further escalation of US-USSR confrontation
Impacts on NATO, Africa, So. Asia
So. America.
US manpower mobilization
(defense dollars in lower technologies.)
Raw materials problems
esp. metals — may open up
new markets for substitutes.

Some product ideas

Non smearing newsprint systems
amenable to recycling.

Repairable fabrics (press on patches
adhesives...); buttons fastening.

Personal Memo from
JOSHUA LEDERBERG

(1) I believe we are experiencing an adjustment of life styles -- soberer expectations: at the same time fewer dropouts. These cultural shifts will surely affect markets
textiles
housing
and the heavy industry to support them

as well as manpower.

Food production patterns may have to take account of climatic cycles (possibly extensive droughts) that will affect many supply/demand factors in chemical industry.
Foreign demands upon grain are in addition subject to political and economic (purchasing power) stresses

Will paper be materially displaced by electronic media (mid. plastic tape, disks; photographic fiche) within the decade? Not likely but barely possible.

Videodisks may in any case illustrate a significant market (and technical challenge) not anticipated 5 years ago.

CRT's and med-high speed TT4's also pose materials challenges for substantial markets.