

INTERNATIONAL SYMPOSIUM ON OPEN ACCESS
AND THE PUBLIC DOMAIN IN DIGITAL DATA
AND INFORMATION FOR SCIENCE

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Economic Overview of Open Access and the
Public Domain in Digital S&T Information

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Science

Creation of knowledge

Three types of inputs:

Human

Physical

Knowledge

Knowledge Inputs

Data

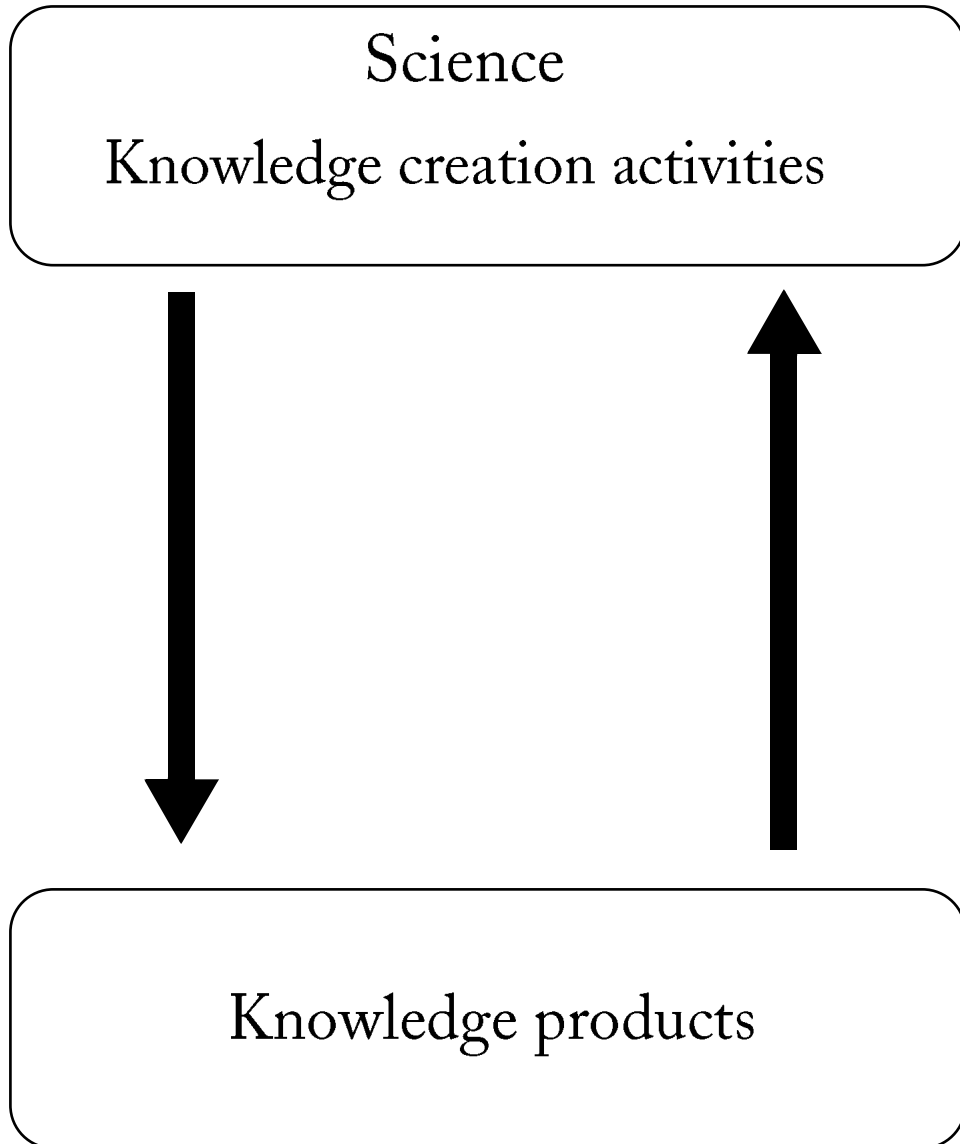
Techniques

Instrumentation

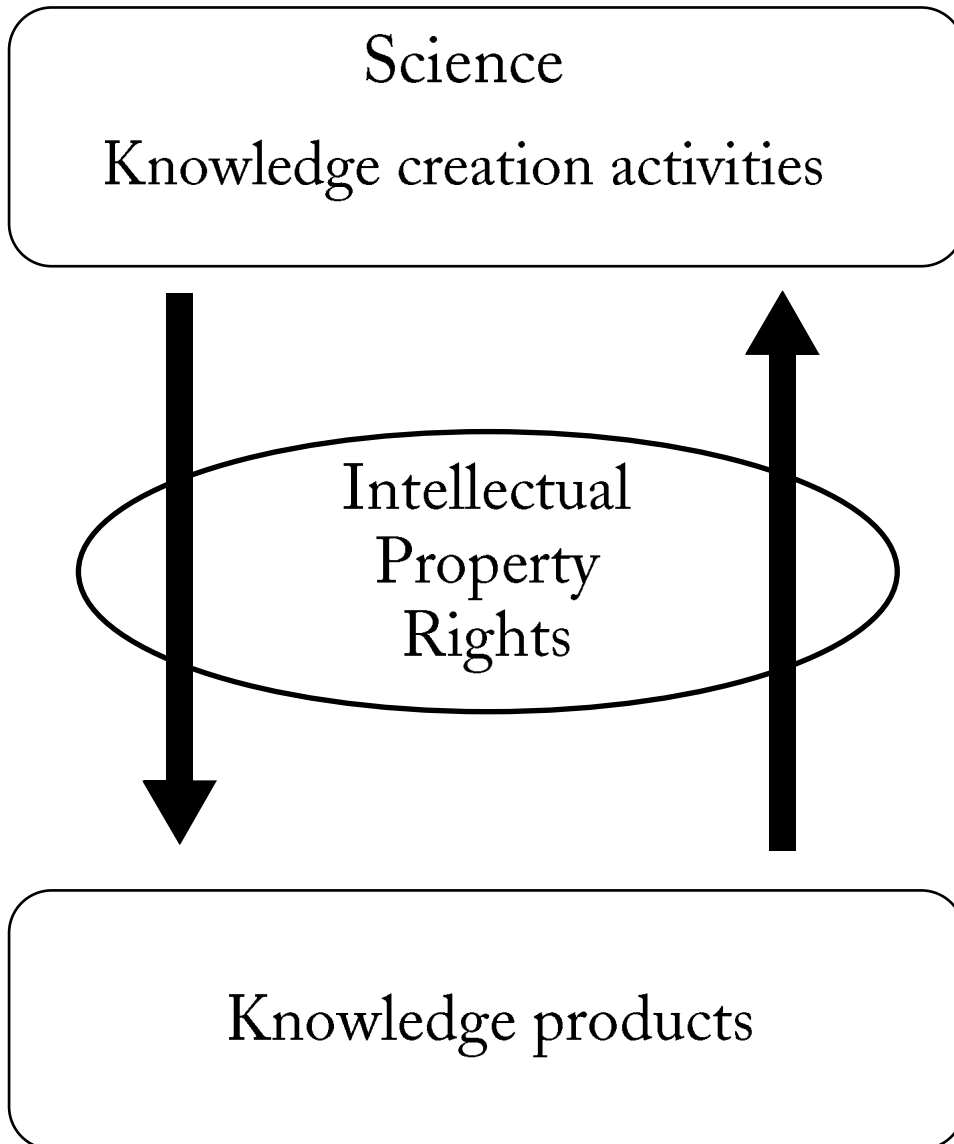
Background information (or knowledge)

Easier access implies easier knowledge creation

Knowledge Flows



New Knowledge Flow



Intellectual Property Rights

Create incentives to create new knowledge

Permit inventor to control use of his/her creations

But they

Hamper the use of new knowledge

Reduce ability to use knowledge created by others

IPR regimes try to strike a balance
hence use of copyrights in science

Two Recent Developments

Information and Communication Technologies

Financial pressures on public science institutions

have upset this balance in the IPR regime

Information and Communication Technologies

Rapid electronic dissemination of knowledge/
information

storing

searching

sorting

re-arranging

As a public good, a piece of knowledge is much
more valuable

(if value goes up, socially optimal to produce more
of it)

So,

Productivity in science should improve

But

Harder to control use of knowledge/information:

The IPR regime is effectively being weakened

provokes calls to strengthen the regime

Financial pressures on public science institutions

Funding for open science is shrinking

Universities looking at “cost-recovery”

Public pressure: “get the inventions out of the lab and into the market”

Public research becomes more like private research

in particular with regard to IPR:

increasing use of patents

stronger protection

The Future

Two scenarios

1. Science becomes harder or more expensive

scientists (institutions) must pay for all of their knowledge inputs (data, techniques, instruments ...)

notice that this puts more financial pressure on institutions, who then have stronger incentives to “get some return”, i.e. to make money on their knowledge creations

2. The world of science divides into haves and have-nots

To avoid rising costs, we see emergence of scientific alliances or consortia

IPR sharing among institutions that have “good” IPR to share

Conclusions

external changes have upset the balance in the IPR regime in science

1. new technologies make “open knowledge” more valuable

this suggests we should weaken IPRs

2. new technologies make it harder to control the use of “knowledge products”

this suggests we should strengthen IPRs

3. new financial issues create incentives to close knowledge and demand stronger protection for it

Since 1. and 2. suggest opposite actions, could it be that the optimal response to 3. is to do nothing?