

# *Of wines and bottles:* The radical approach to IC for Cities

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# The rationale

Most Knowledge City definitions (and by extension, most approaches to IC) still regard knowledge as a (significant) *resource* that leverages the monetary output of a productive system (firm, community). Even when such view has been overcome, the assumption often prevails that an incremental approach may lead from, say, a digital city or an innovation cluster to a knowledge city. Our aim is to characterize and falsify those two fallacies, emphasizing by contrast a **radical** approach to IC.



*You can't put new wine in old bottles*

**as much as**

*You can't put IC into Industrial Capitalist Societies  
or into Money-ladden Theories of The Firm*

**or**

the **radical** approach to IC for Communities (and firms)



# Contents

1. The received paradigm: *Transitional* Approaches to IC
2. The emerging paradigm: *Radical* Approach to IC
3. The disruption axiom



*“It is an axiom of design  
that a system  
can perform that, and only that,  
for which it has been designed”*

Bela Bánathy

*“In order to solve a complex  
problem we must be able to  
think outside of the system  
within which we are operating”*

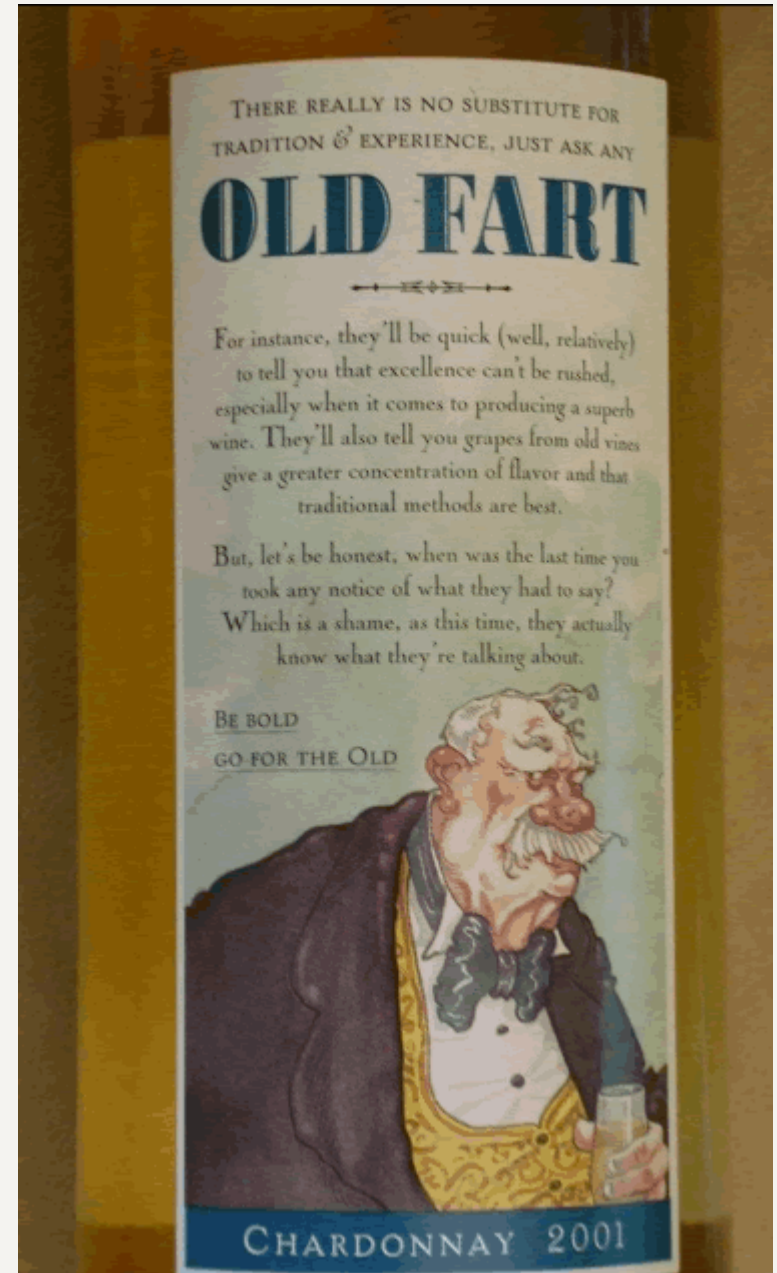
Albert Einstein





# 1. The received paradigm: *Transitional* approaches to IC

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# The received view

The industrial capitalist society of the 19th and 20th Centuries is based on the assumption that the profitable performance of a firm depends on the optimal combination of material production factors and that the welfare of a nation can only be funded by means of the growth of its Gross Product: that the overall well being of a social system is a function of its material economic surplus.



# Transitional approaches to IC

- IC is an intervening variable that contributes to increase productivity
- IC is measured indirectly
- IC is accounted as an addendum to financial states
- IC categories are heterogeneous and acquire value significance insofar as they can be reduced to monetary terms
- Financial growth is fed back into the production system
- Social development depends upon economic growth





# Based on the Physics Economy

## Laws of Physics



- Diminishing returns
- Scarcity
- Rivalry of goods
- Property
- Labour as muscular strength/coordination
- Labour/capital dychotomy



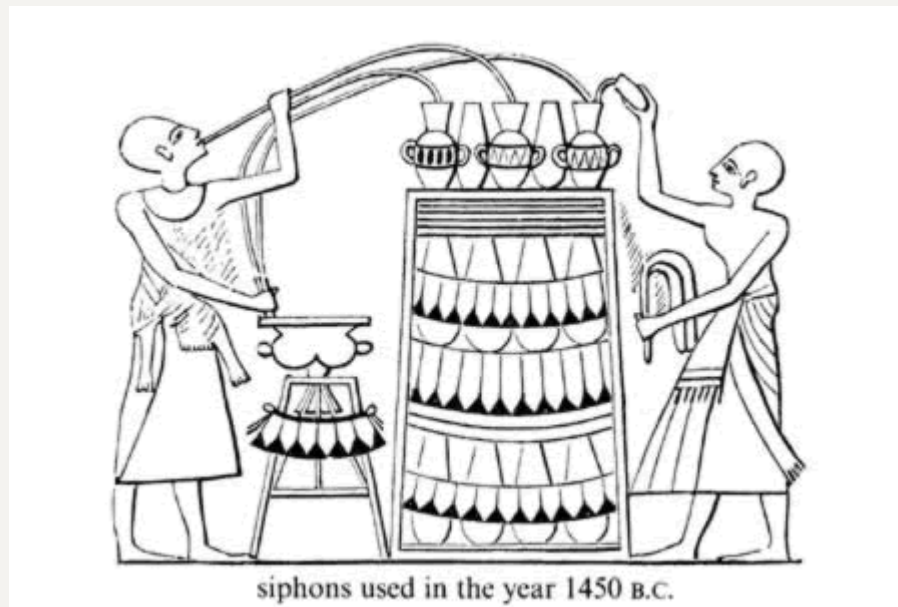
# Which founds a view of KBD as...

*“...a culture of innovation and competitiveness, where the greatest importance is given to R&D. Research, as a process of knowledge generation, supports innovation, productivity and economic improvement”*

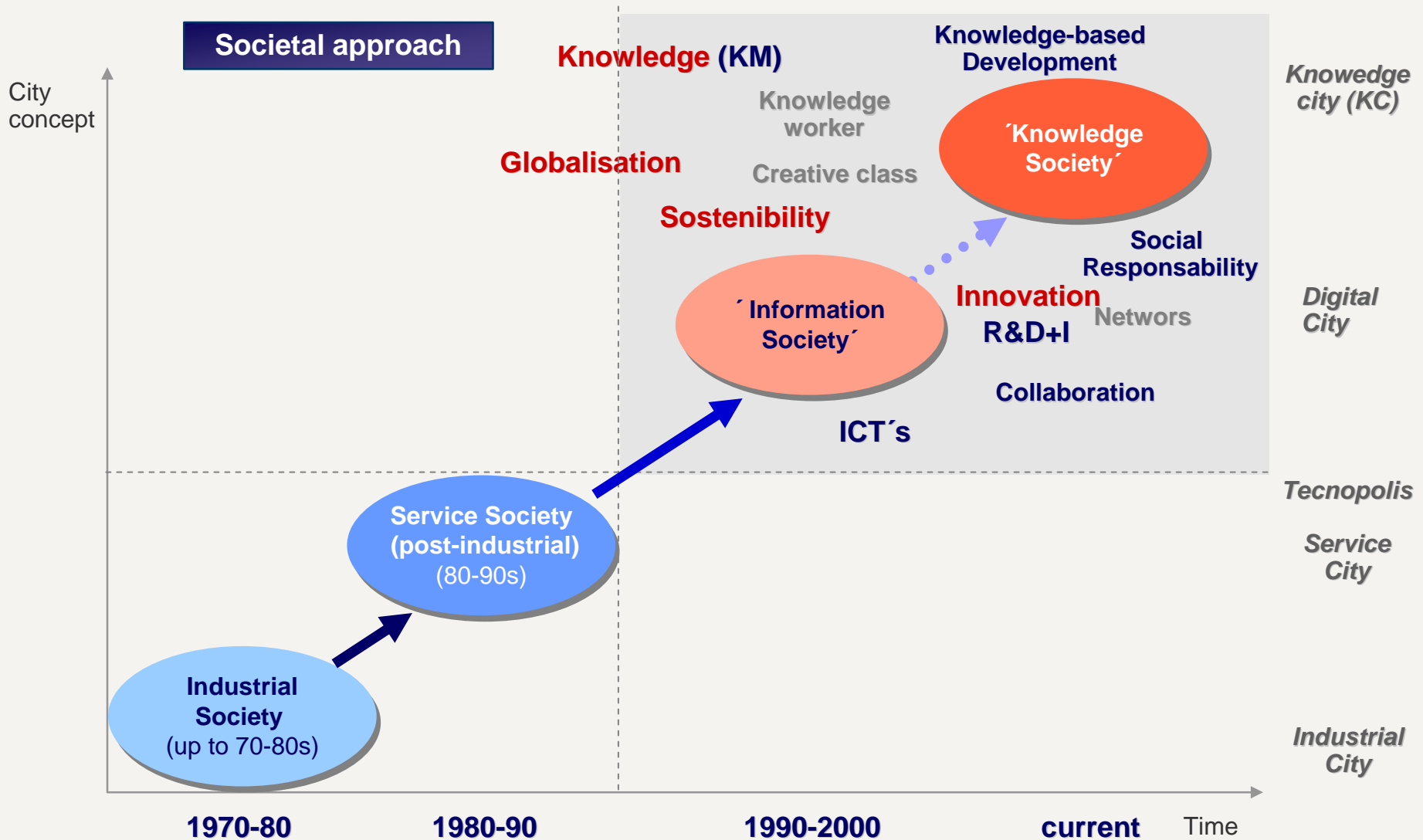
*José N. González: Towards a knowledge-based development, 2006, p. 13*

*“...the need to promoting an accelerated and and sustained productivity growth and of leveraging competitiveness through a new development model that privileges the use of knowledge”*

*Bernardo  
González-  
Aréchiga  
(ibid.)  
p. 17)*



# Incremental view of KCs



## 2. The emerging paradigm: *Radical* Approach to IC

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# Counterexamples to *physical economics*

- 1. Conectivity:** the sum value of a network increases as the square of the number of members
- 2. Intangibility:** the market value of a firm can greatly superseed a 100% of its book value
- 3. Non-decrementality:** the rent value of successive  $x$  product units  $x_i, x_{i+1}, x_{i+2}, \dots$ , may not diminish as a function of iterations  $y$  of production cycle  $y_i, y_{ii}, \dots, y_n$
- 4. Non-rivalry:** possession  $\alpha(q)$  of a good  $q$  by an agent  $\alpha$ , does not exclude the simultaneous possession of that same good by agents  $\beta, \gamma, \dots, \omega$ , such that  $\beta(q) \wedge \gamma(q) \wedge \dots \wedge \omega(q)$
- 5. Externalities:** Besides participating agents  $x, y$  in a transaction  $xRy$ , non-participating agents  $u, v, \dots, z$ , can benefit as well
- 6. Non-diferentiation capital/labour:** labour factor can simultaneously operate as capital factor





# Which call for a reinvention of...

- Economic Science: The value dynamics of human productive systems, or a *Knowledge Economy*
- Accountancy practices: The taxonomy of value categories, or a *Knowledge Capital System*
- Management systems: The principles to organize value production of knowledge-based firms and communities or *KM* and *KBD*

*i.e.*

- An entirely new (formal) game:
  - New boundaries
  - New elements
  - New rules



# Radical approach to IC

- Each capital category is worth on its own; each has distinctive value
- Financial capital has a specific representation and exchange value
- The set of capital elements of an entity determine as a whole its Net Future Value
- A complete, consistent and homogeneous value structure is required: a *Capital System*<sup>TM</sup>
- A *Capital System*<sup>TM</sup> is a taxonomy containing the entire value dynamics of a productive entity
- An *Integrated Value Report*<sup>TM</sup> computes and displays the Net Future Value of an entity



# Based on Behavioral Economy

- Constant returns
- Abundancy
- Non-rivalry
- Distributed property
- Work as analytic/emotional intelligence
- Capital/labour interdependence



**Laws of Psychology**



# Where a KC is understood as...

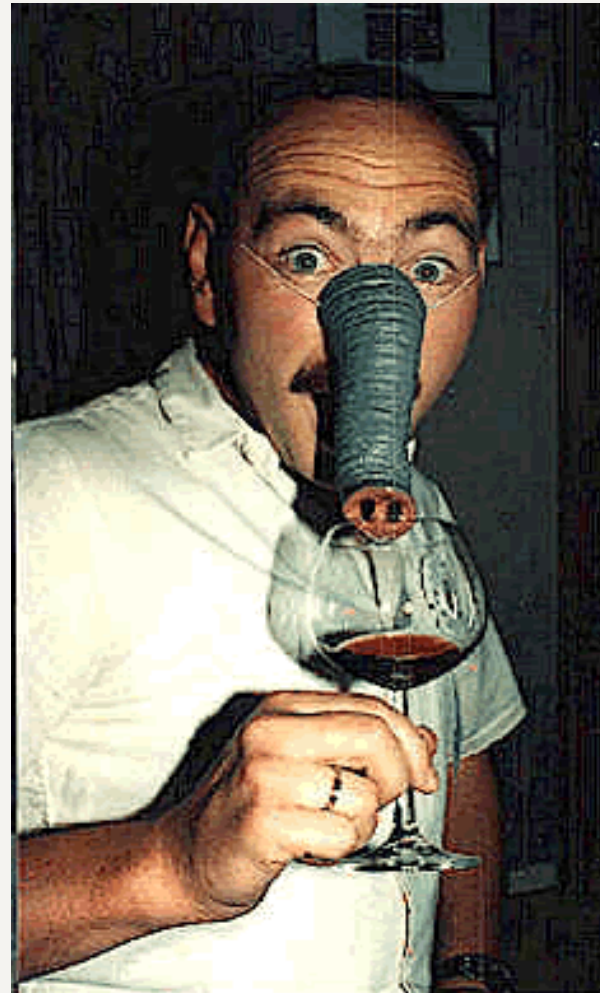
**Knowledge City** (def<sup>n</sup>):  
an urban community in  
which its citizens  
undertake a deliberate  
and systematic  
initiative to found its  
future development on  
the identification and  
dynamic balance of its  
capital system





# 3. The Disruption axiom

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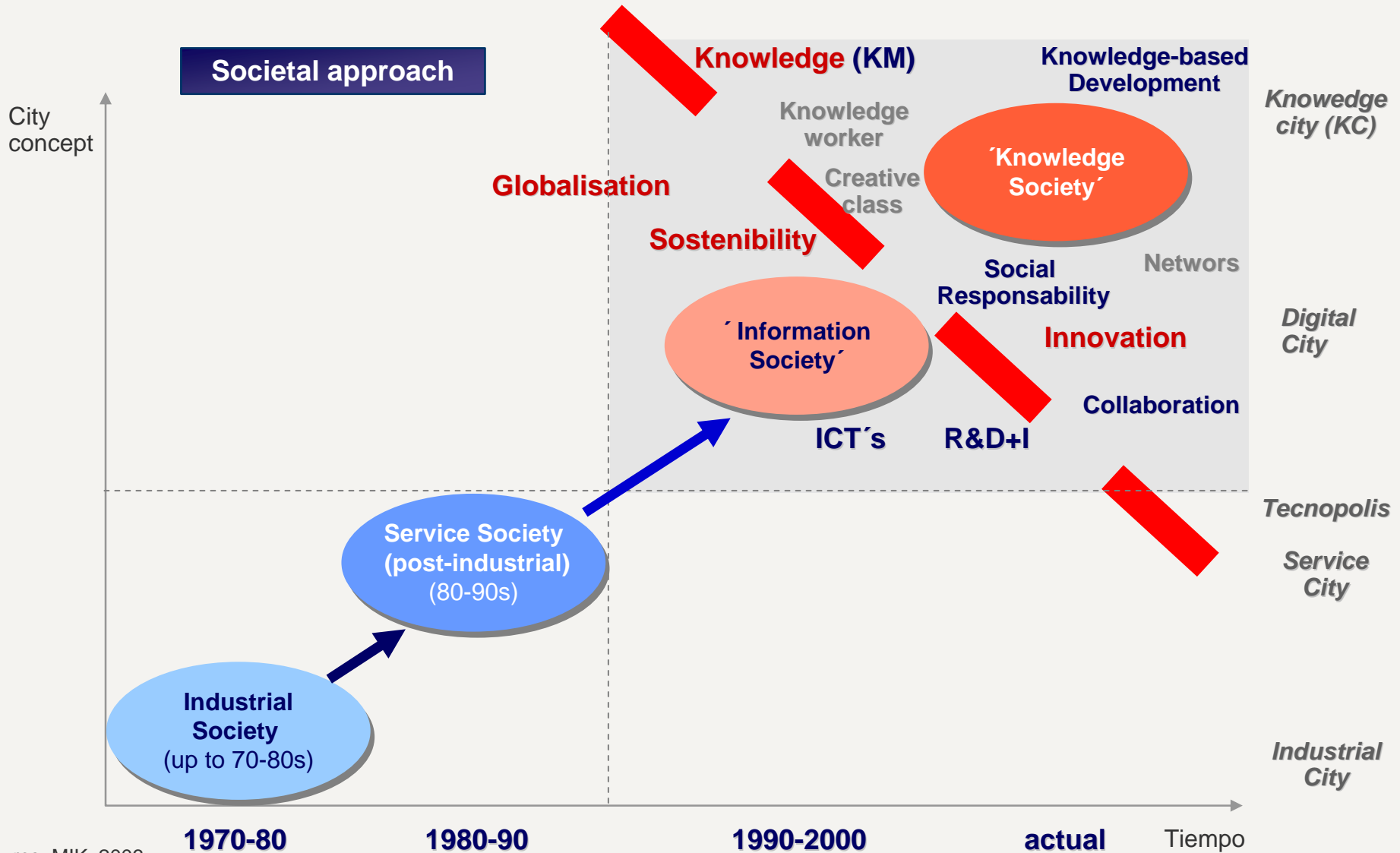
# This is NOT an incremental change



*It is tempting to follow this road: e-library, e-learning, e-health care, e-participation, e-civil society, etc. But will converting every organization into an e-organization result in the transition of a society to a Knowledge Society (k-society)? That would be tantamount to assuming that at a certain level, the quantitative accumulation of “e-“s would switch into a “k-“, a qualitative leap that, on reflection, is rather difficult to take.*

*UN Department of Economic and Social Affairs, 2005*

# NOT an incremental transition



# A “border crossing approach” ...

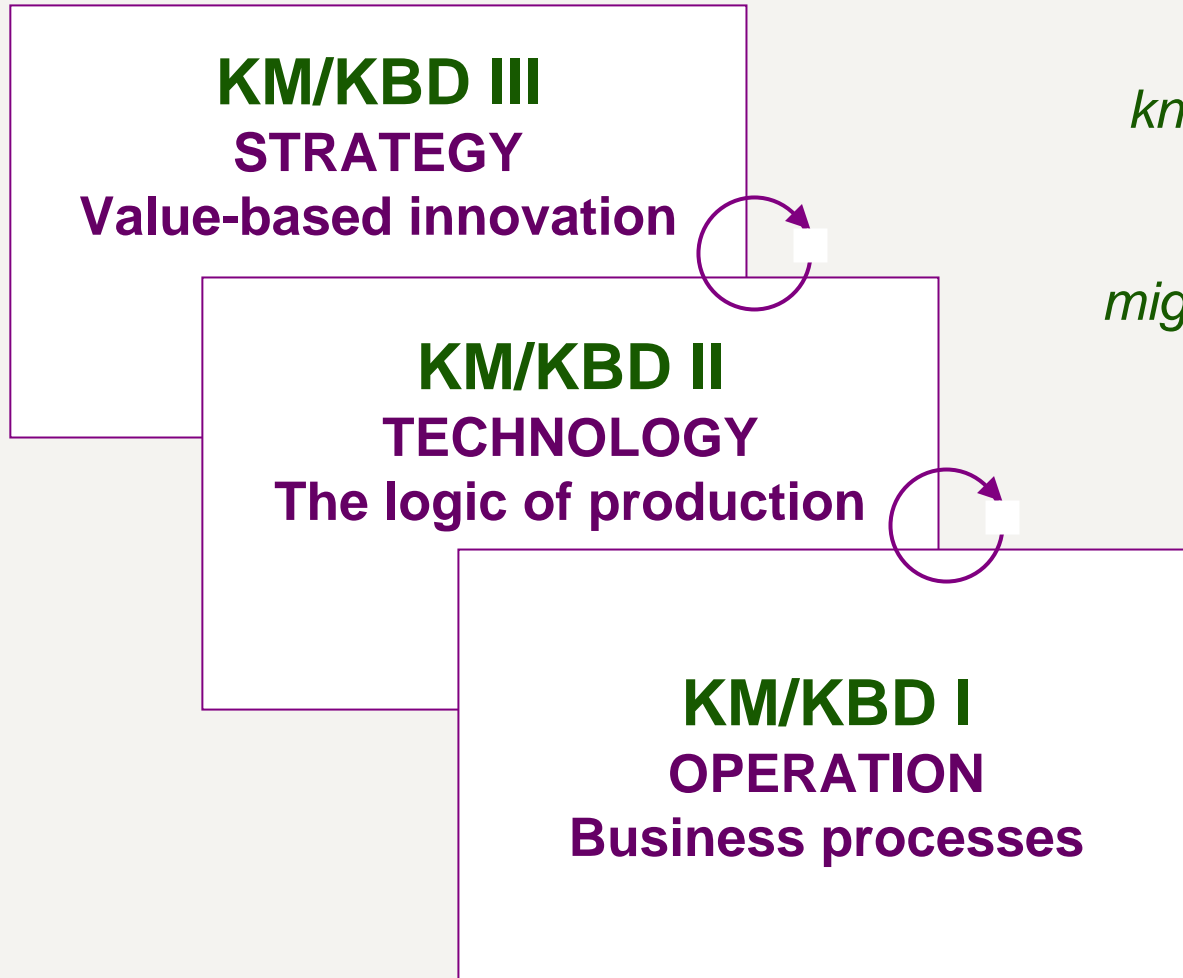
*“This argument proposes that immaterial and material assets should be regarded in the future as being of equal weight and needing to be balanced in new ways in all areas of leadership and management activity.*

*Finally, this requires addressing the theme on a different level. It is to be viewed not as a subordinate or partial function of management or administration, but as a comprehensive and interdisciplinary leadership task”*

Bernhard Von Mutius(2005), p.152



# Three levels of understanding of the firm / of society



*“IC is viewed as  
knowledge about knowledge,  
knowledge creation  
and how such processes  
might be leveraged into value”*

*Jørgensen, 2006*

# Pre-paradigmatic accountancy

Patito SA de CV			
Al 31 de diciembre de			
Activos			
Activos Circulantes			
	2003	2004	
Efectivo e inversiones (nota 4) .....	P\$ 3,479.5	3,813.5	
Cientes, menos estimaciones por incobrables (nota 5) .....	5,606.9	4,767.8	
Otras cuentas por cobrar (nota 6) .....	4,826.9	5,064.4	
Inventarios (nota 7) .....	7,100.1	7,046.8	
Otros activos circulantes (nota 8) .....	796.3	1,048.8	
Total de activo circulante .....	21,809.7	21,741.3	
<b>Inversiones y Cuentas por Cobrar a largo plazo (nota 9)</b>			
Inversión en compañías asociadas .....	7,349.3	16,903.3	
Otras cuentas por cobrar a largo plazo .....	2,199.1	3,644.9	
Total de inversiones y cuentas por cobrar a largo plazo .....	9,548.4	20,548.2	
<b>Propiedades, maquinaria y equipo (nota 10)</b>			
Terrenos y edificios .....	55,321.1	55,194.9	
Maquinaria y equipo .....	158,701.3	155,381.2	
Depreciación Acumulada .....	(105,842.2)	(107,057.6)	
Inversiones en proceso .....	2,461.7	3,575.3	
Total de propiedad, maquinaria y equipo .....	110,641.9	107,093.8	
<b>Activos Intangibles y Cargos Diferidos (nota 11) .....</b>	<b>49,250.6</b>	<b>44,239.6</b>	
<b>Total del Activo .....</b>	<b>P\$ 191,250.6</b>	<b>193,622.9</b>	
<b>Pasivo y Capital Contable</b>			
<b>Pasivo Circulante</b>			
Préstamos bancarios (nota 12) .....	P\$ 2,634.1	5,031.9	
Documentos por pagar (nota 12) .....	3,173.0	319.9	
Vencimiento circulante del pasivo a largo plazo (nota 12) .....	10,062.8	6,275.2	
Proveedores .....	5,831.9	5,964.6	
Otras cuentas y gastos acumulados por pagar (nota 6) .....	12,084.4	9,282.1	
Total del pasivo circulante .....	33,786.2	26,873.7	
<b>Pasivo a Largo Plazo (nota 12)</b>			
Préstamos bancarios .....	29,678.5	30,302.4	
Documentos por pagar .....	34,560.4	30,412.3	
Vencimiento circulante del pasivo a largo plazo .....	(10,062.8)	(6,275.2)	
Total del pasivo a largo plazo .....	54,176.1	54,439.5	
<b>Otros Pasivos</b>			
Pensiones y otros beneficios al retiro (nota 14) .....	664.1	656.4	
Impuestos Diferidos (nota 18B) .....	12,580.5	12,828.3	
Otros pasivos (nota 13) .....	9,246.5	7,258.2	
Total de otros pasivos .....	22,491.1	20,742.9	
<b>Total del Pasivo .....</b>	<b>110,453.4</b>	<b>102,056.1</b>	
<b>Capital Contable (nota 15)</b>			
Interés mayoritario:			
Capital Social .....	59.1	61.7	
Actualización del capital social .....	3,624.5	3,624.6	
Prima en colocación de acciones .....	38,171.5	41,339.8	
Insuficiencia en la actualización del capital contable .....	(73,101.3)	(73,725.9)	
Efecto acumulado inicial de impuestos diferidos (nota 3K) .....	(6,100.2)	(6,100.2)	
Utilidades retenidas .....	104,282.8	107,471.8	
Utilidad neta .....	7,508.4	14,562.3	
Total del interés mayoritario .....	74,444.8	87,234.1	
Interés minoritario (nota 15E) .....	6,352.4	4,332.7	
Total del capital contable .....	80,797.2	91,566.8	
<b>Total del Pasivo y Capital Contable .....</b>	<b>P\$ 191,250.6</b>	<b>193,622.9</b>	

Las notas adjuntas son parte de estos estados financieros consolidados.

Patito, SA de CV	
<b>Lots and lots on IC indicatros</b>	
Indicator 1	
Indicator 2	
Indicator 3	
Indicator 4	
Indicator 5	
Indicator 6	
Indicator 7	
Indicator 8	
Indicator 9	
<b>More and More indicators</b>	

(F+IC) theory:

INDUCTIVE  
-experiential  
-assymetric

and

DYCHOTOMIC

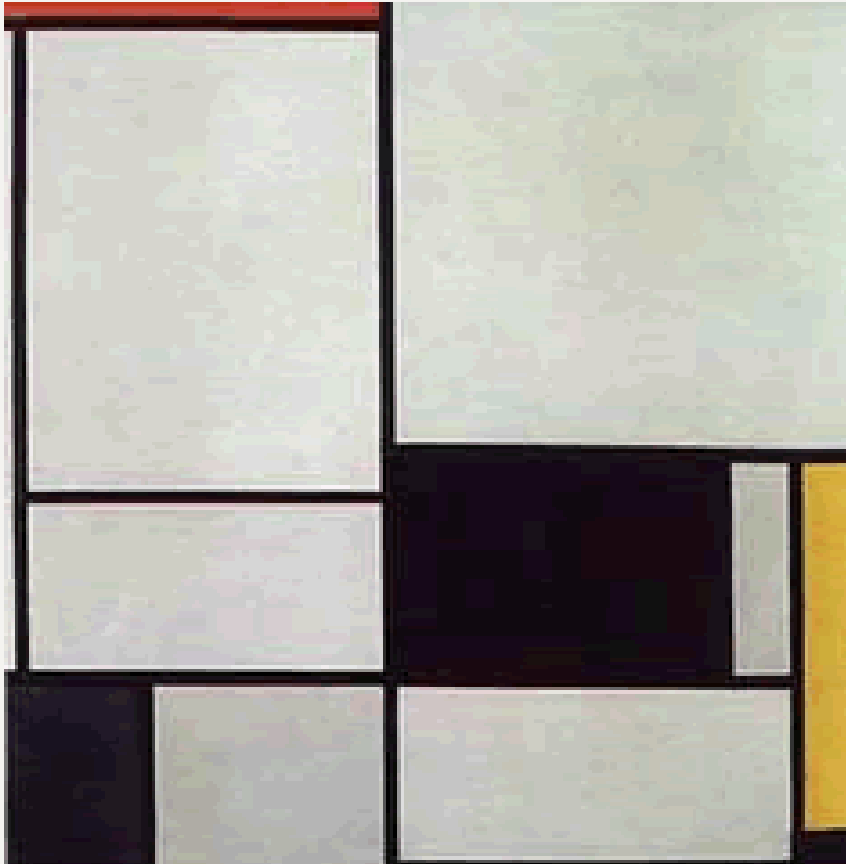
Financial states

+ IC addendum

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# Paradigmatic accountancy



New Theory of Firm:

DEDUCTIVE  
-completeness  
-consistency

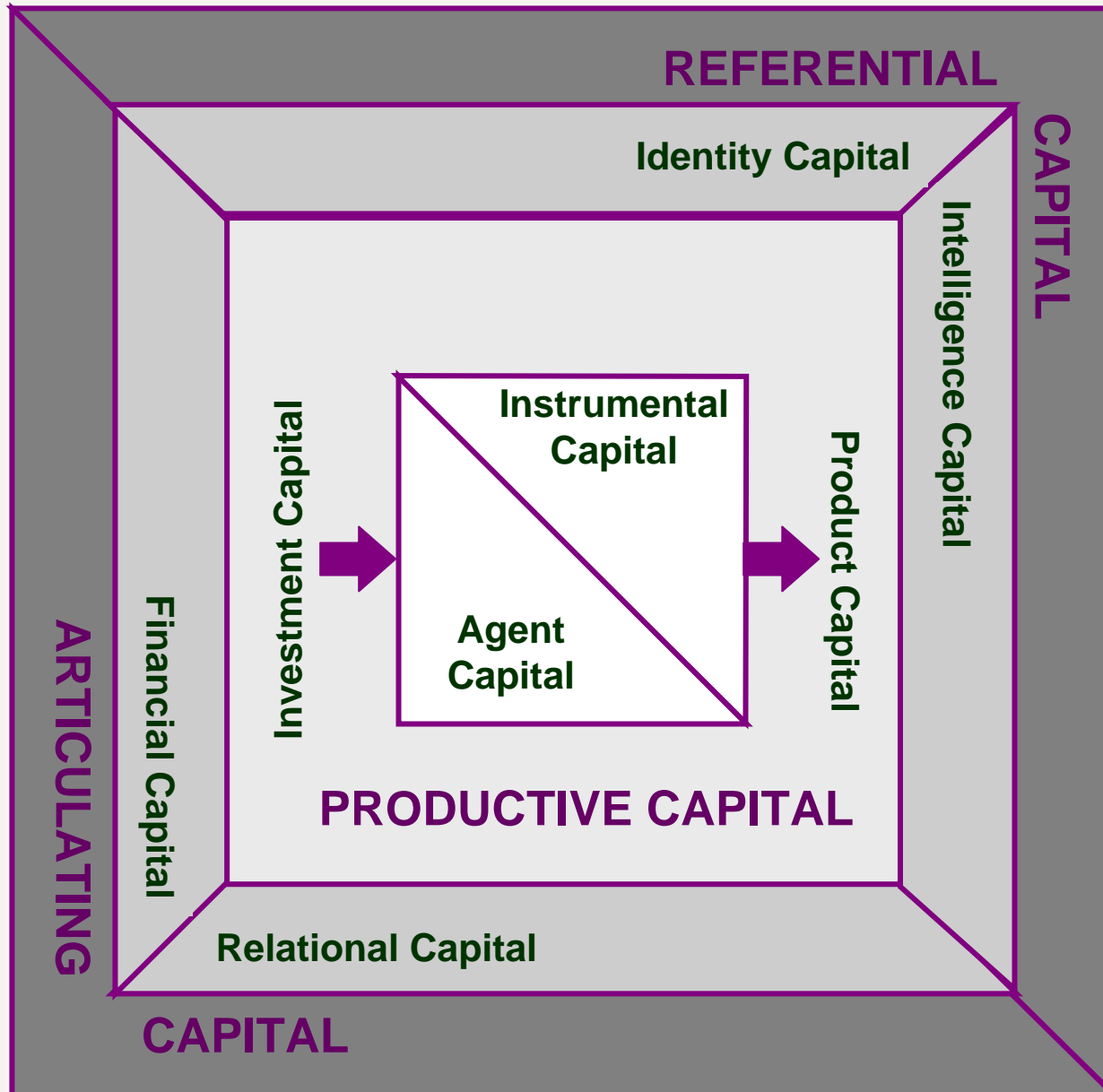
and

Homogeneous

Integrated value states

(Pete Mondrian: Composition No. 2)

# The Capital System<sup>©</sup>



# Conclusion: the radical view

The Knowledge Society of the 21<sup>st</sup> Century shall be based on the assumption that the holistic and sustainable development of a community is based upon the dynamic balance of its unique value universe and that such balance can only be funded on the identification and development of its capital system.



# New bottles for a new wine

“It is the totality of change in a country that matters...

Development is about putting all the component parts in place...together and in harmony...

...too often we have focused on the economics, without a sufficient understanding of the social, the political, the environmental and the cultural aspects of the society”

James D. Wolfensohn

(in Ellerman et. Al, 1998)



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# References

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