Deep Transitions

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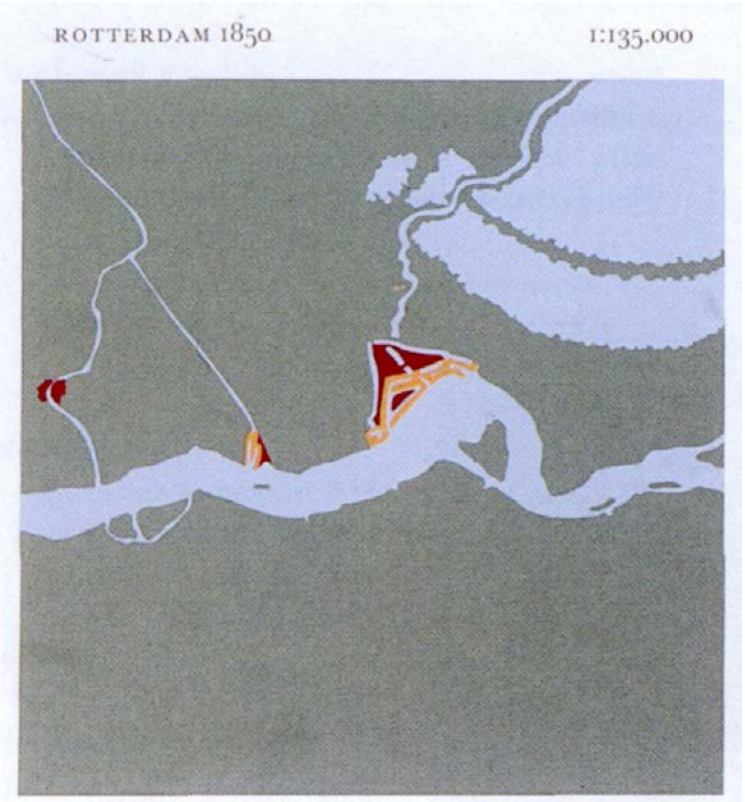
Eu-SPRI Winterschool
Innovation Policy for Transformative Change
16-20 January, 2017


LLOYD
3


Maas
Rijn
Ems
Weser
Elbe
Oder
Dnieper
Po
Donau


ROTTERDAM 1850
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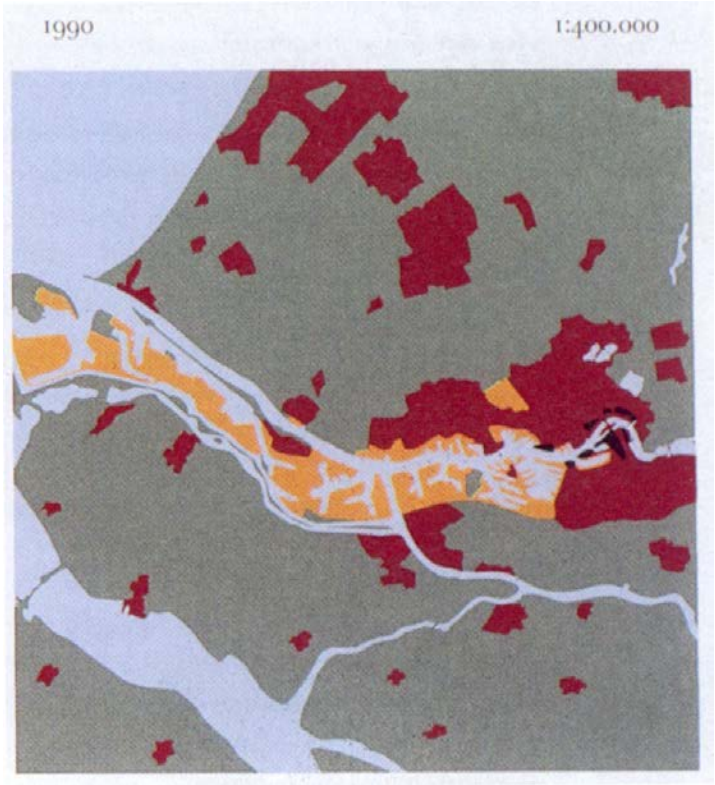
1990
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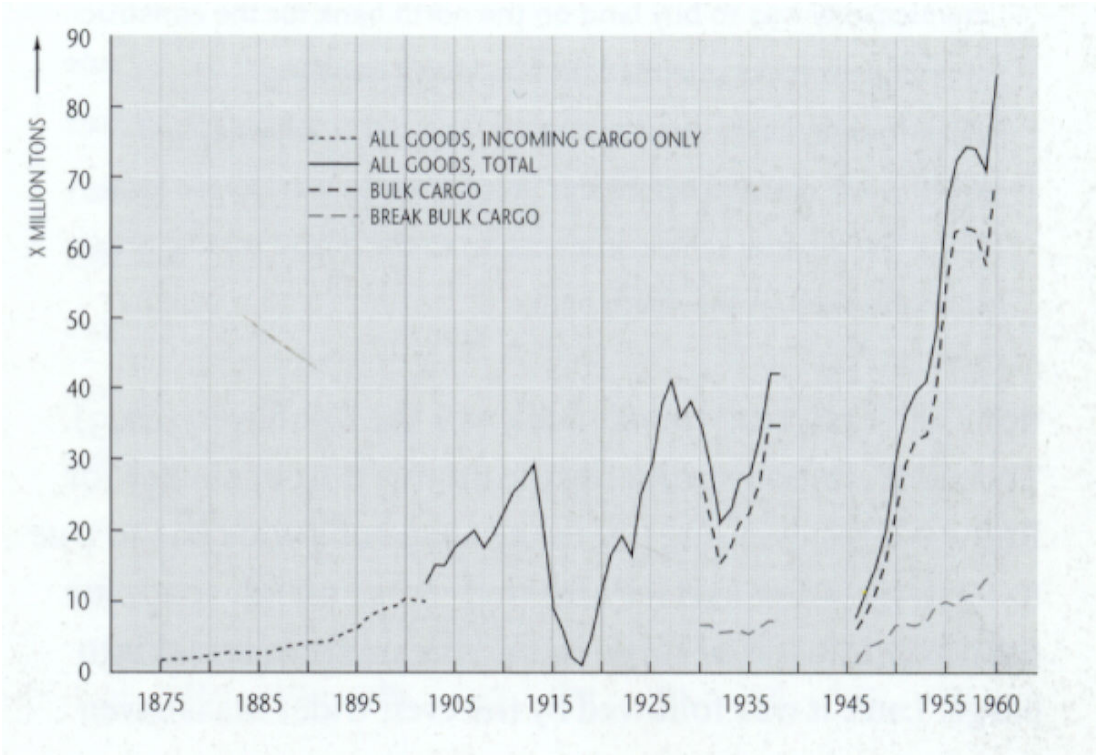
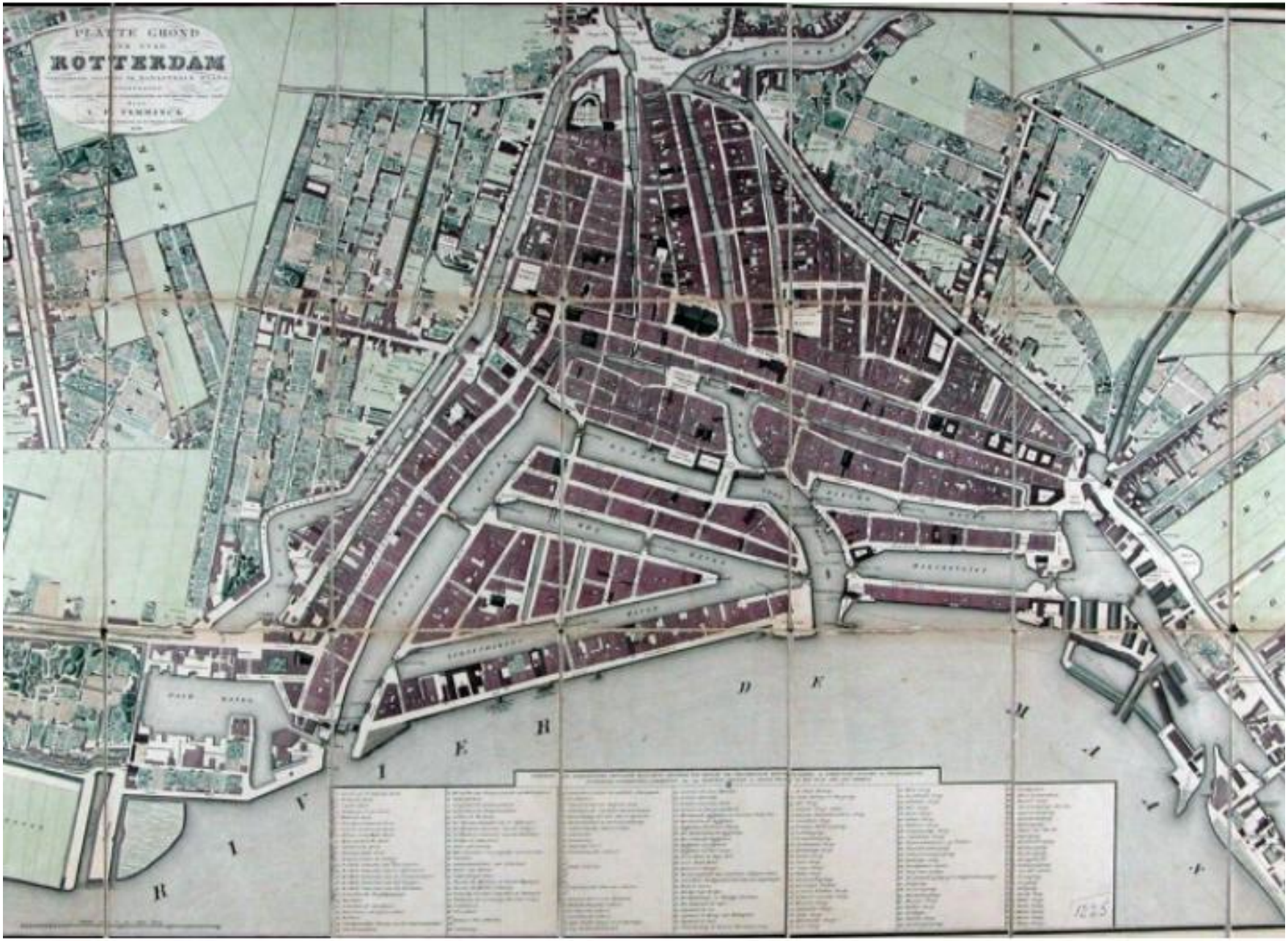
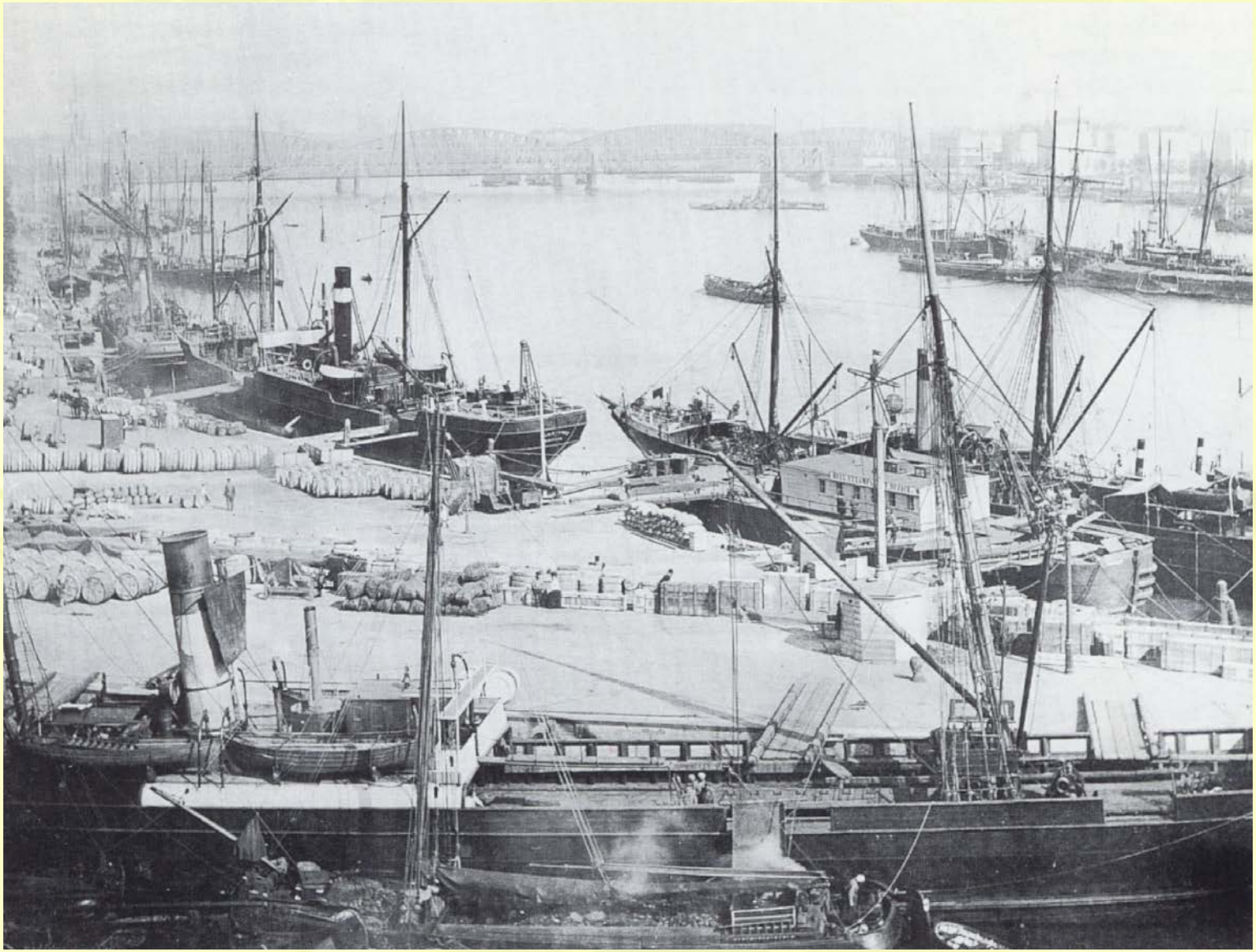
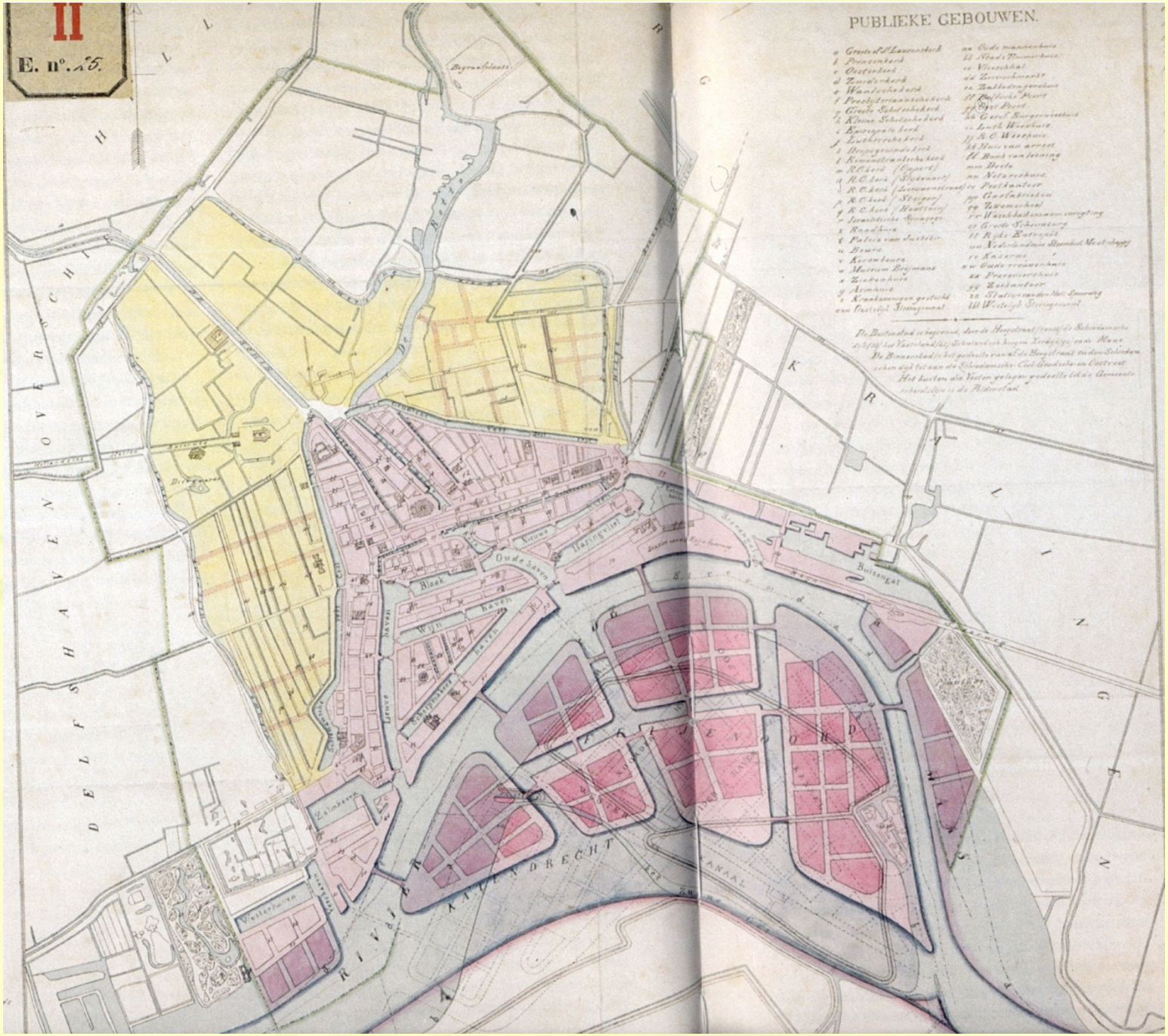
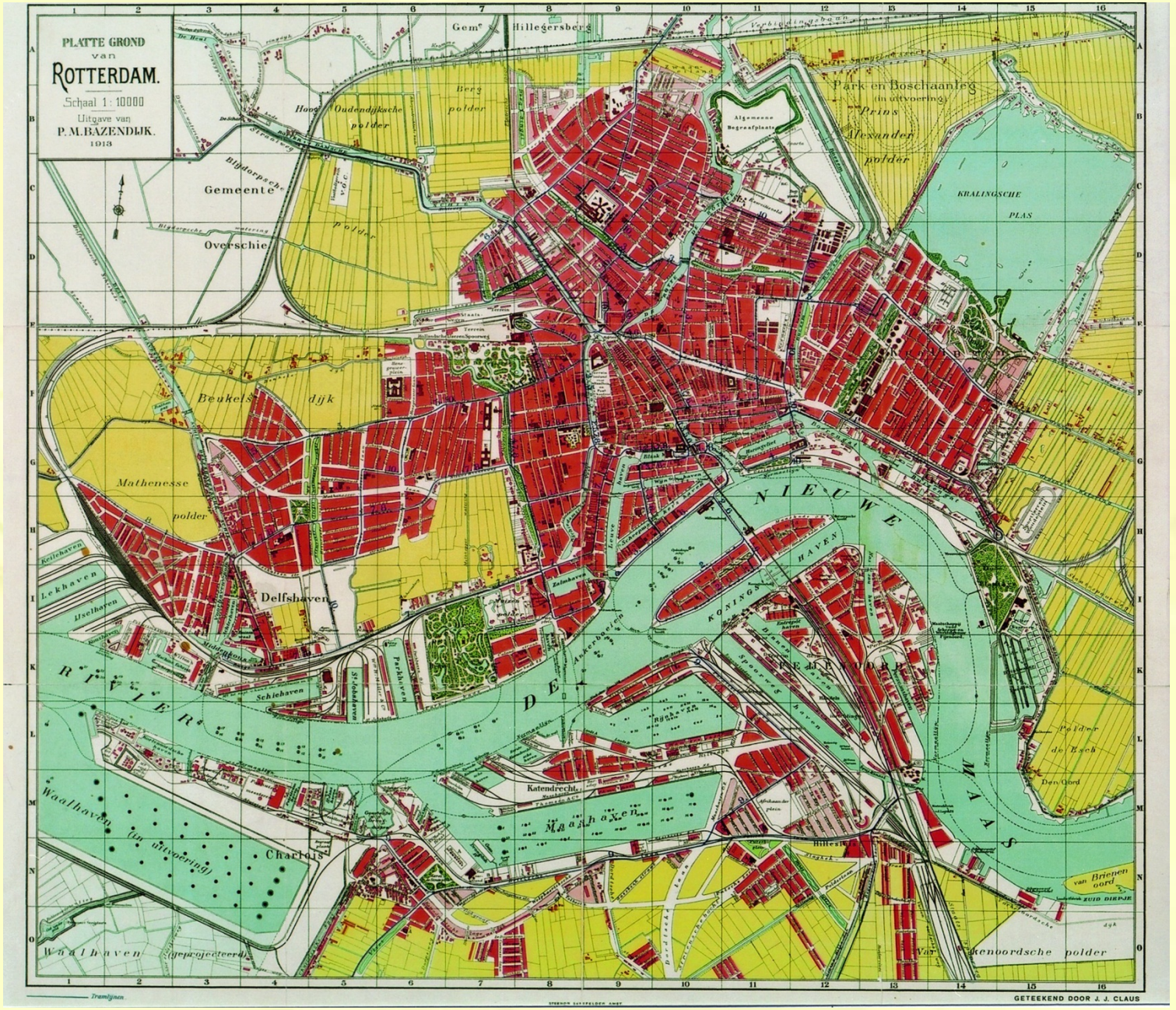

X MILLION TONS
90
80
70
60
50
40
30
20
10
0
ALL GOODS, INCOMING CARGO ONLY
ALL GOODS, TOTAL
BULK CARGO
BREAK BULK CARGO
1875
1885
1895
1905
1915
1925
1935
1945
1955
1960

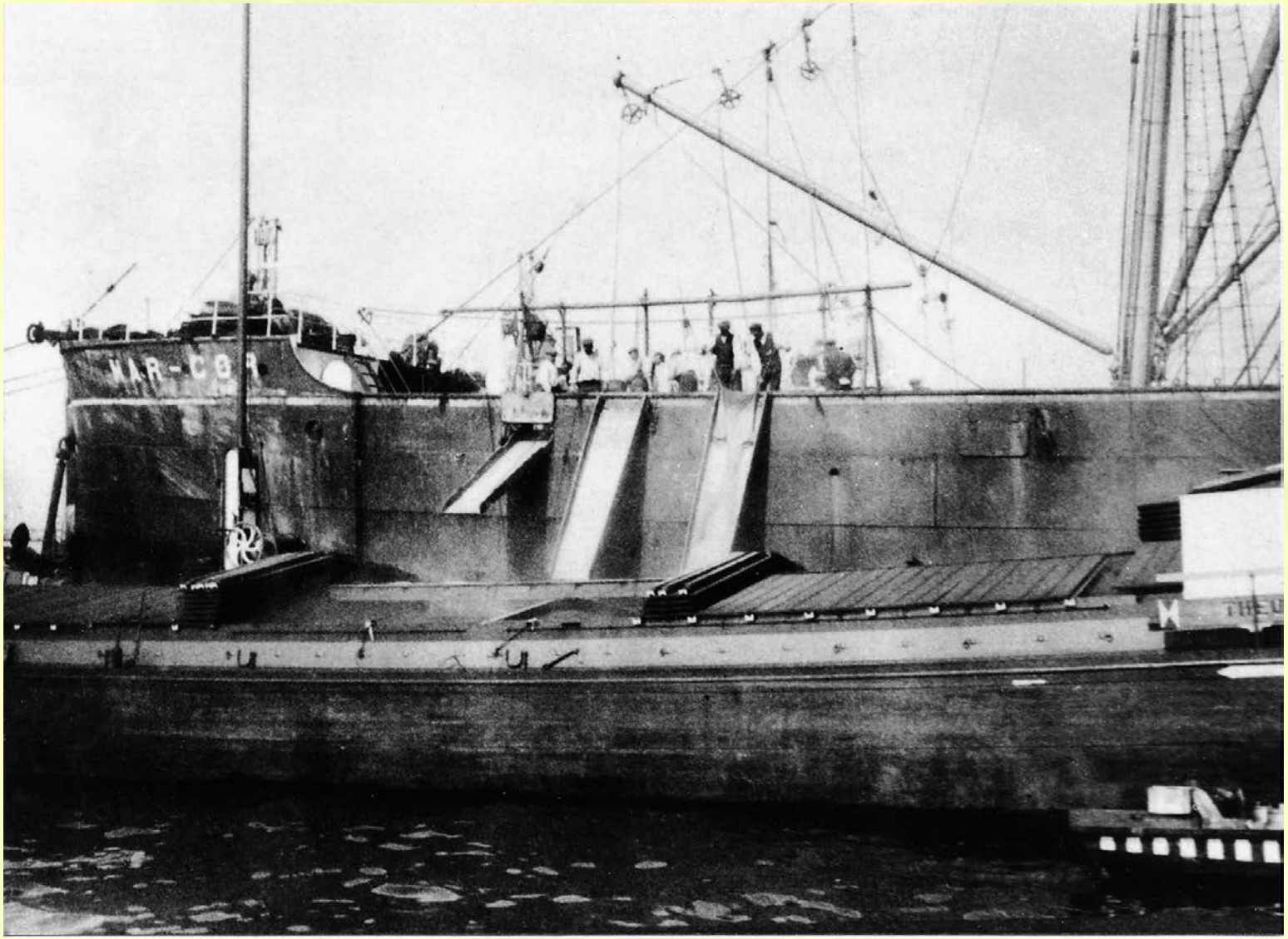

PLATTE GROND
ROTTERDAM

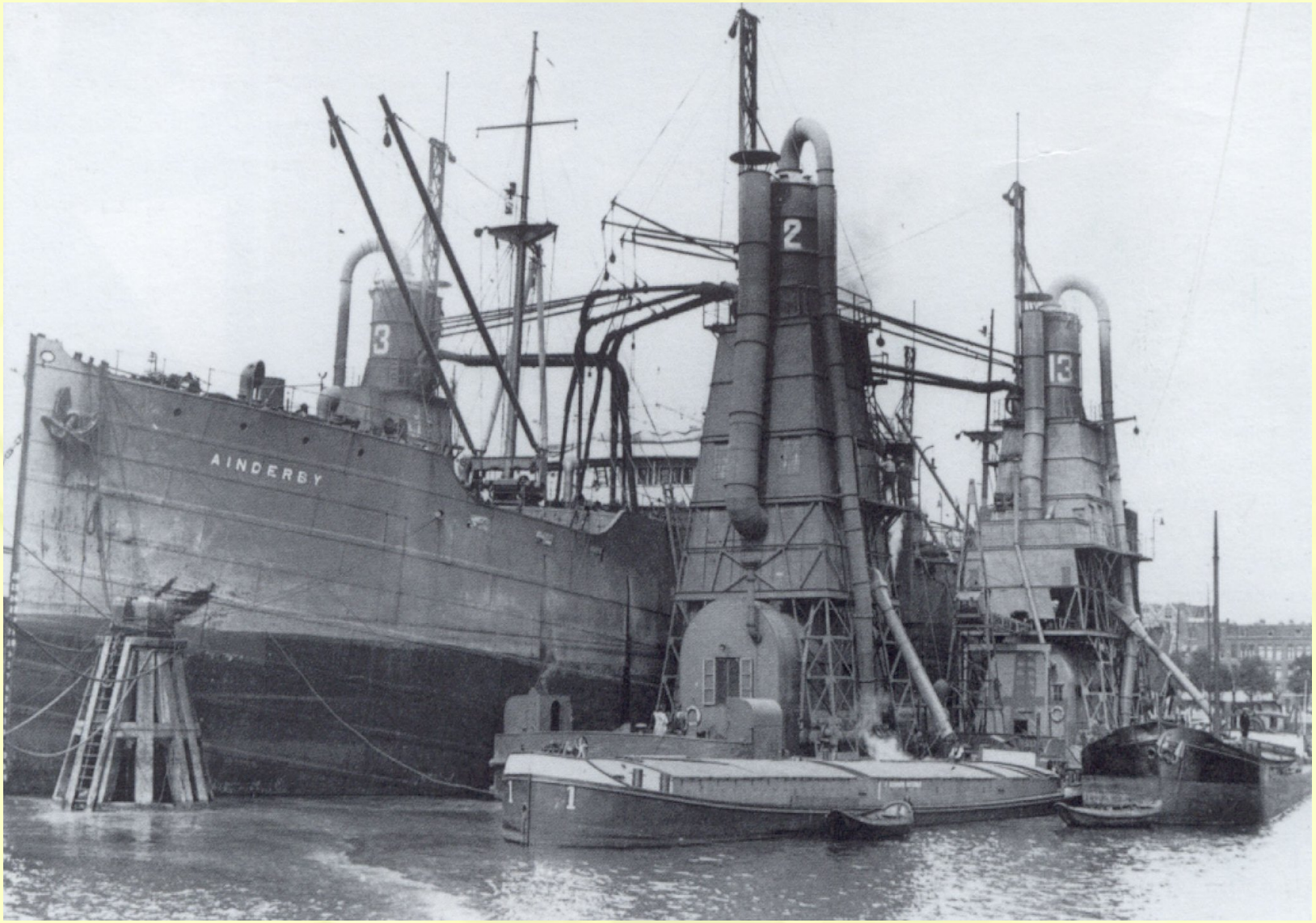



II
E. n°. 15.
PUBLIEKE GEBOUWEN.
Oude haven
Nieuwe Haringvliet
Black
Wijn haven
Zalmhaven
Buitengat
DELFSHAVEN
OVERSCHIE
KRALINGEN
RIVIER
KATENDRECHT
Begraafplaats
De Beer


PLATTE GROND
van
ROTTERDAM.
Schaal 1 : 10000
Uitgave van
P. M. BAZENDIJK.
1913
Gem.e Hillegersberg
Berg polder
Hoog Oudendijksche polder
Park en Boschaanleg (in uitvoering)
Prins Alexander polder
Algemeene Begraafplaats
KRALINGSCHE PLAS
Gemeente Overschie
Polder
Beukelsdijk
Mathenesse polder
NIEUWE MAAS
KONINGS HAVEN
Delfshaven
Schiehaven
RIJKS HAVEN
Katendrecht
Maashaven
Waalhaven (in uitvoering)
Waalhaven (ingeprojecteerd)
Charlois
Hillesluis
Polder de Esch
Den Oord
van Brienen oord
ZUID DIJKJE
Kenoordsche polder
Tramlijnen
GETEEKEND DOOR J. J. CLAUS


R
DOROTHY




AINDERBY
3
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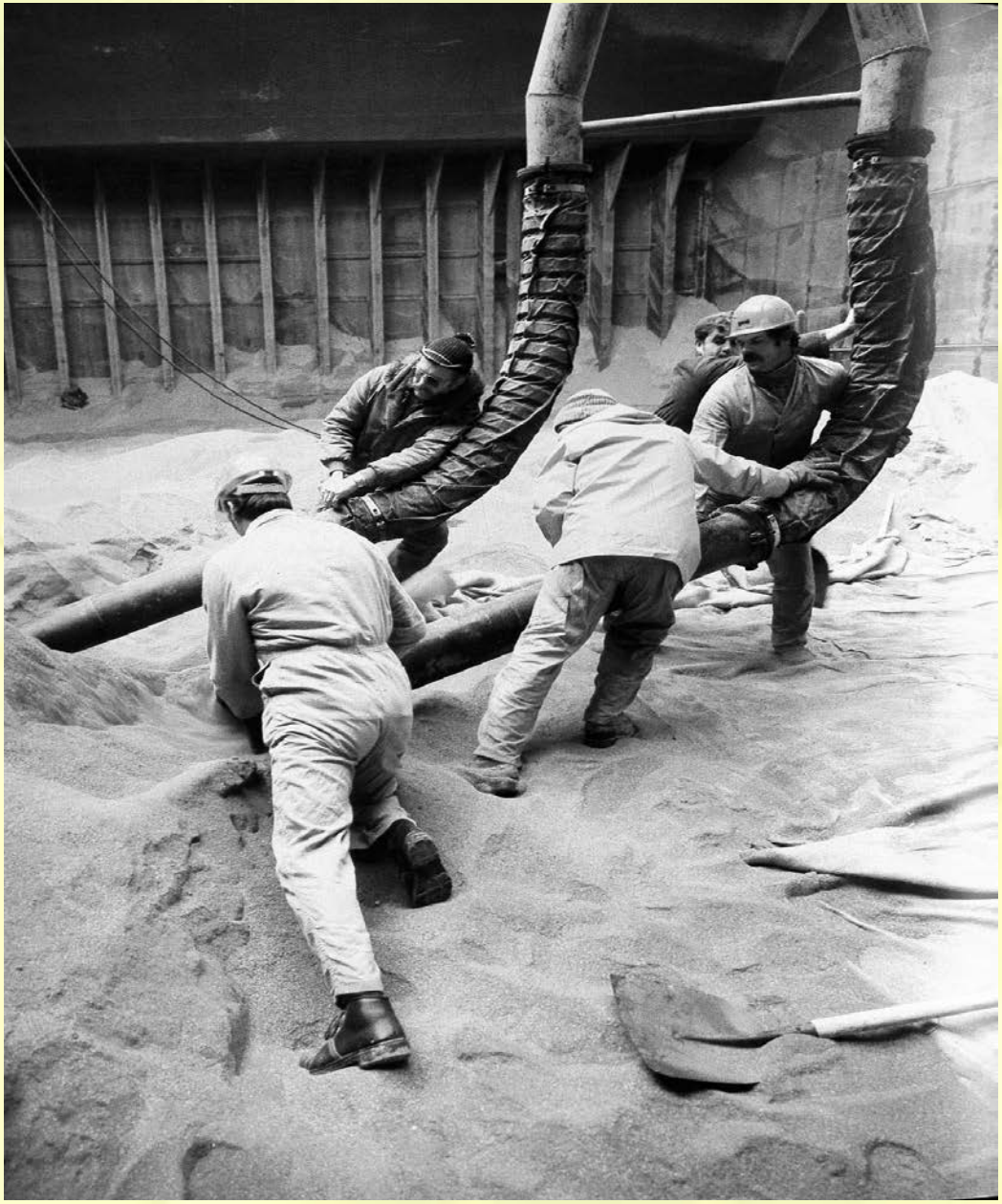


LOSSE NUMMERS 15 CENT

GROOT ROTTERDAM

6E JAARG. No 19 — 27 JULI 1928

REDACTIE EN ADMINISTRATIE: STATIONSW OTTERDAM — TELEFOON INTERC. No. 540

HOE ROTTERDAM ER BINNEN ENKELE JAREN UIT ZAL ZIEN

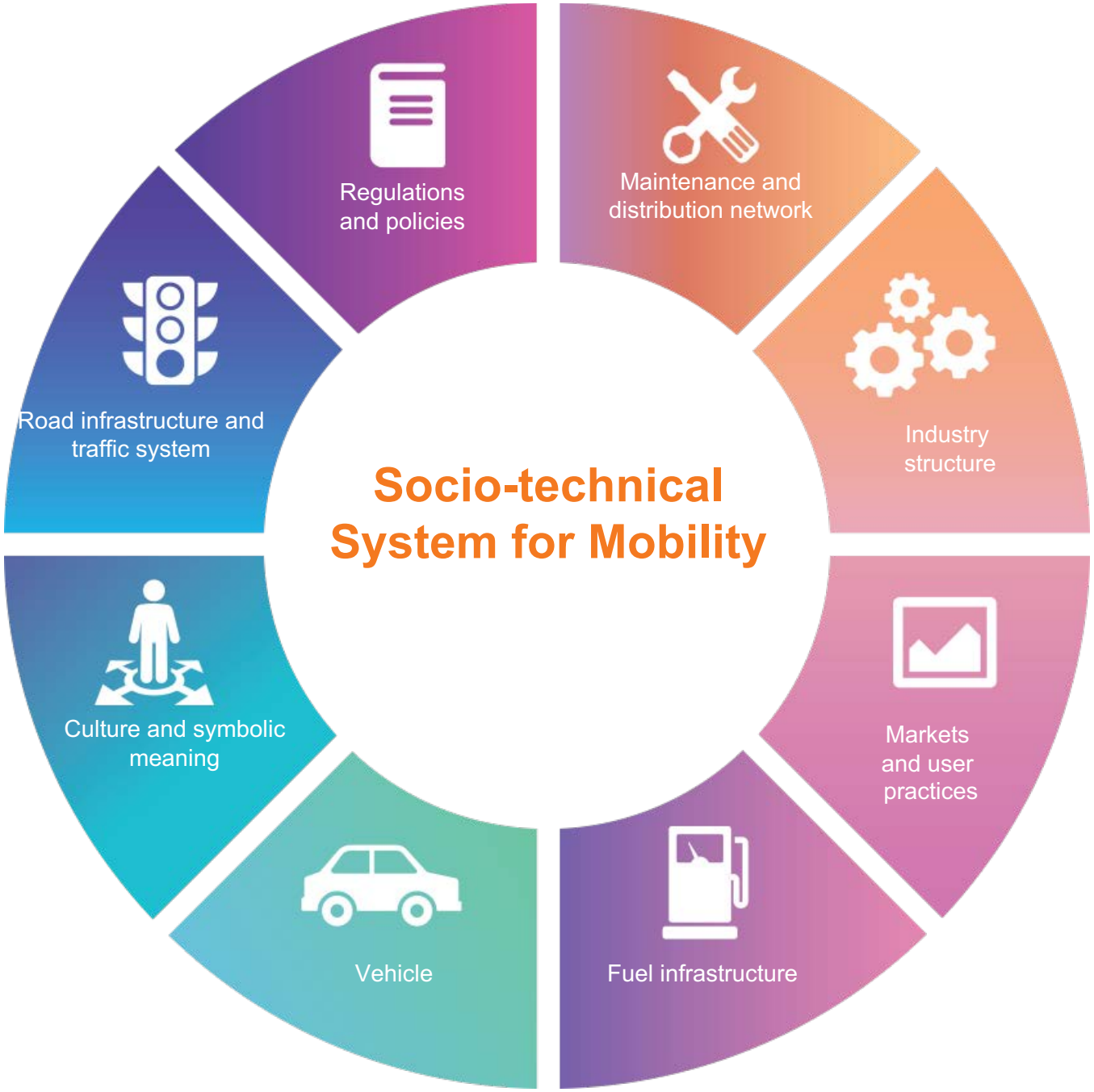
Elk jaar worden de gebouwen in de Rottestad grootscher en hooger. Wanneer straks het Driehavenplan geheel gereed is, zullen we het nog beleven, dat de stoute wolkenkrabbers van Rotterdamsche firma's met een wereldnaam aan de oevers van de Maas verrijzen.

4. Deep Transition

Transitions in multiple sociotechnical systems/regimes

…Moving in a shared direction, through a series of waves/surges

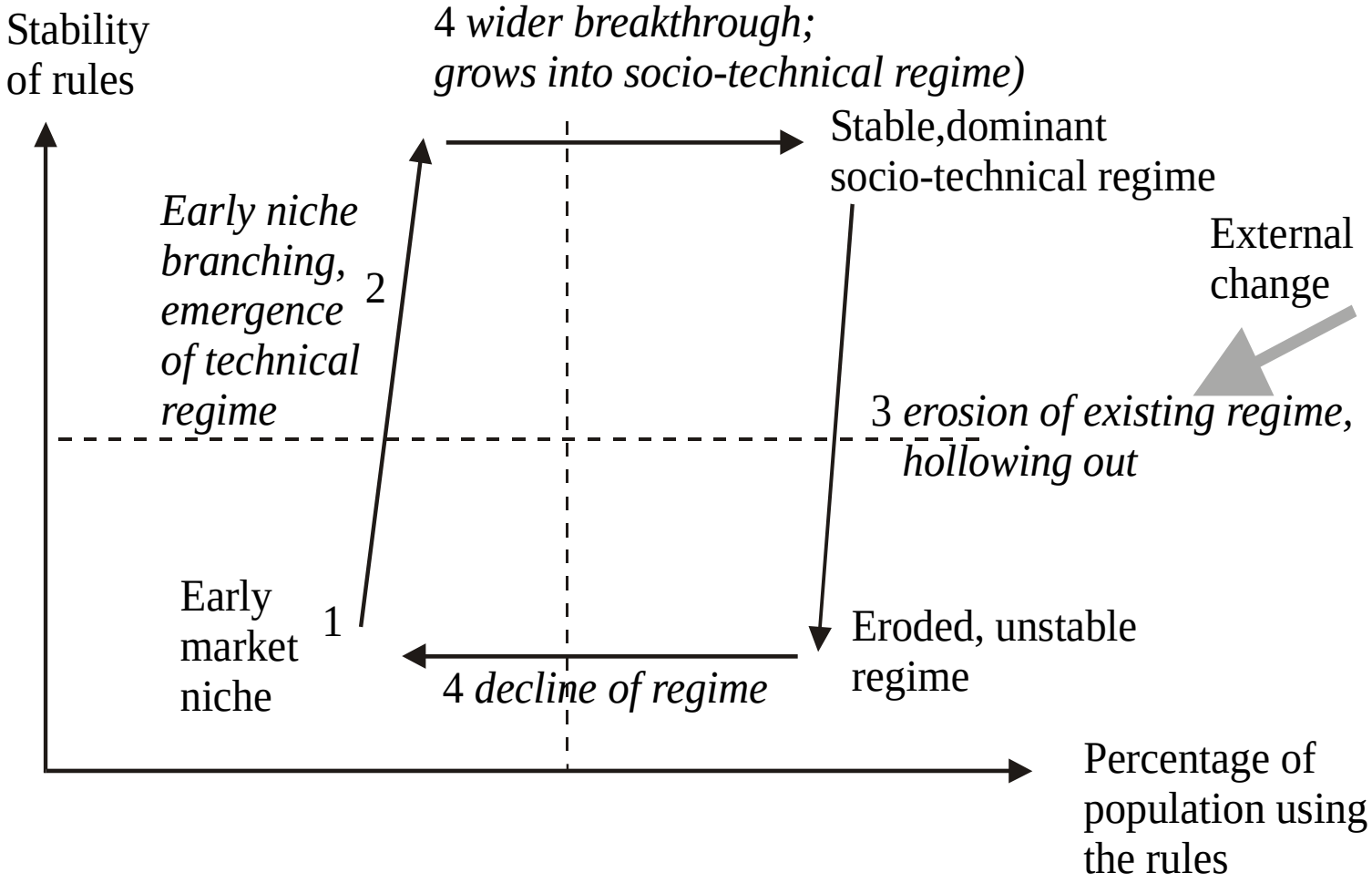
Deep Transitions: Emergence, Acceleration, Stabilization and Directionality
Johan Schot, Laur Kanger 2016. Available at **www.johanschot.com**


Regulations and policies
Maintenance and distribution network
Industry structure
Markets and user practices
Fuel infrastructure
Vehicle
Culture and symbolic meaning
Road infrastructure and traffic system
Socio-technical System for Mobility

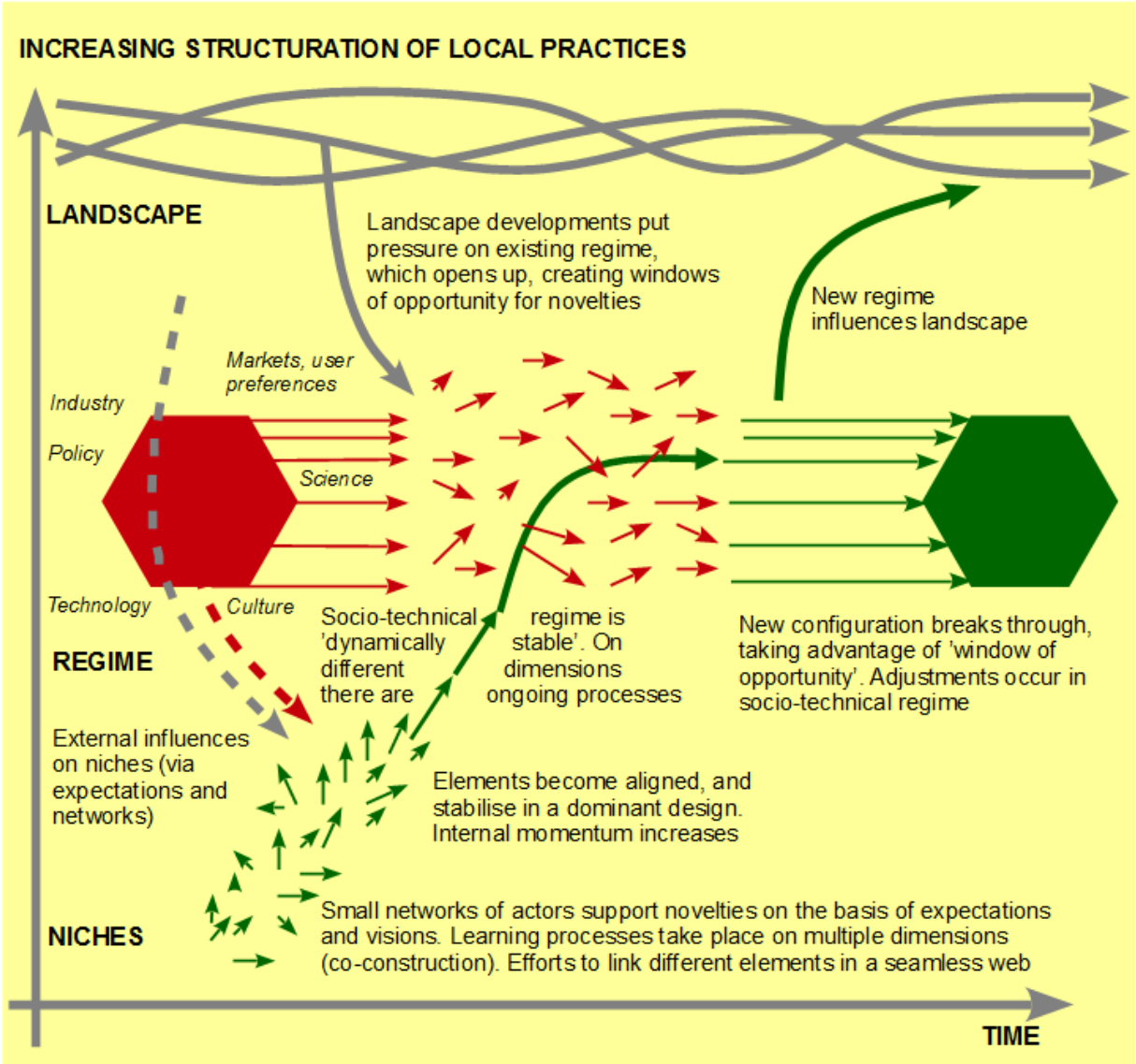

M-48

Definition of a socio-technical regime

A socio-technical technical regime consists of a distinct set of stable rules, used by actors to guide socio-technical design and use. This rule-set is embodied in shared engineering search heuristics, ways of defining problems, user preferences, policies, expectations, product characteristics, skills and standards.



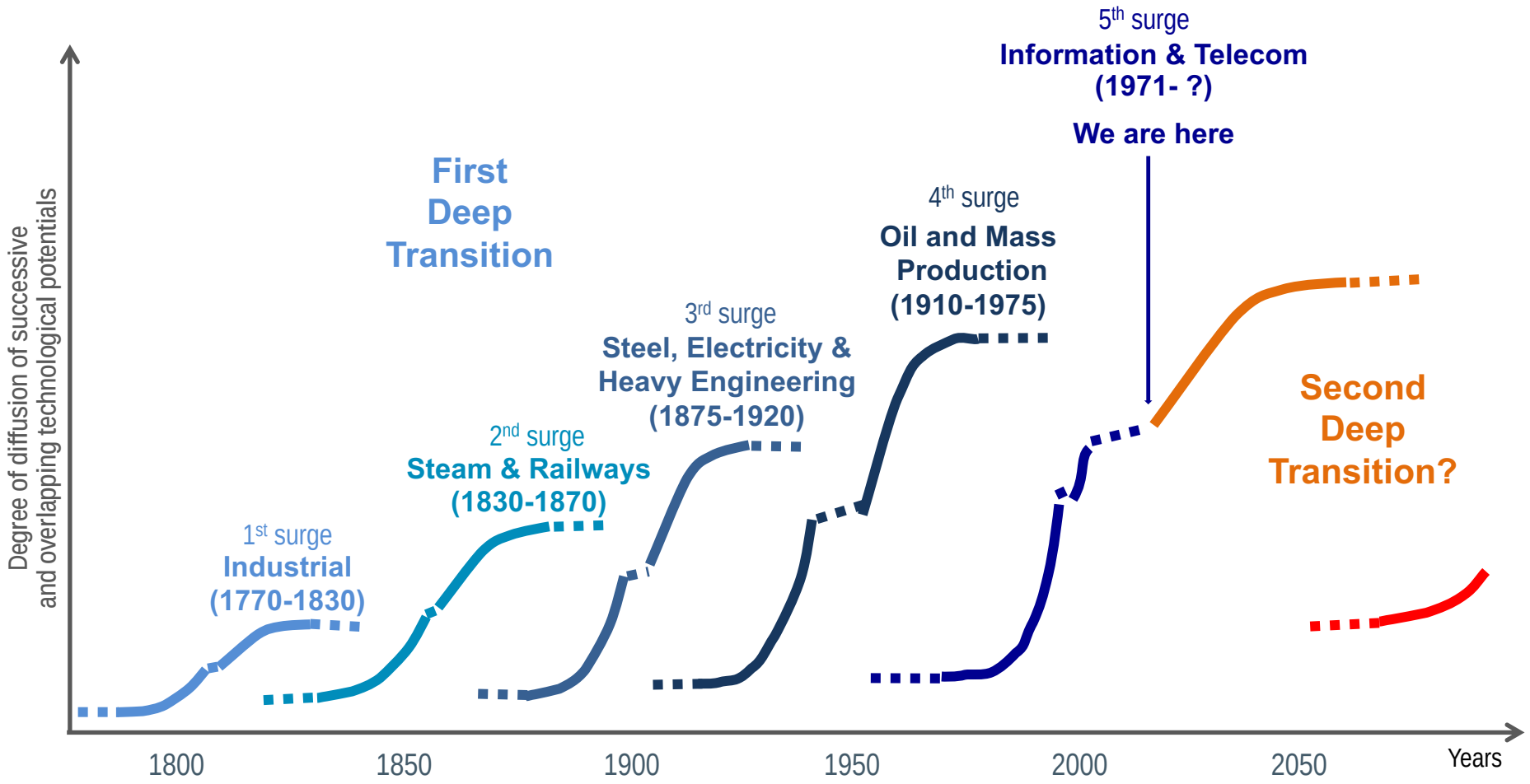
Representation of a transition of a single system



Geels, 2002, Geels and Schot, 2007, Schot and Kanger, 2016

TEP is…a best practice model made up of a set of all pervasive generic technological and organizational principles, which represents the most effective way of applying a particular technological revolution and using it for modernizing and rejuvenating the whole of the economy. When generally adopted, these principles become the common-sense basis for organizing any activity and for structuring any institution.” (Perez, 2002: 17)

First and Second Deep Transitions



Source: Adapted from C. Perez (2002)

What is a Deep Transition?

- Deep Transition is a shift in a shared direction (1) of several socio-technical systems (2) reorganizing the entire economy and society (3) (eventually on a global scale) (4).
- This shared direction could be referred to as a techno-economic paradigm (TEP) (Perez, 2002);
- A TEP is a meta-sociotechnical regime, and provides coordination across a range of sociotechnical regimes.

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- First proposition: early TEPs seeds and ideas emerge in several systems, and are subject to MLP dynamics and struggles:
  - Beginning of TEP is “small in fact and big in promise” (Perez, 2002: 36);
  - It is a distributed process and starts early on in the installation period.
  - There is a competition between various TEPs

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- Second proposition: TEPs develop aggregation and mobilising power through multi-regime dynamics
  - This process of sharing and imposing TEPs between systems only happens later in the installation period
  - Two main carriers for multi-regime dynamics are functional (global value chains) and structural couplings (shared use of infrastructures, actors, policies) (Konrad et al, 2008)
  - Couplings can be local, national and transnational, and can be organized by dedicated intermediary actors
  - Couplings provide stabilisation and direction

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- Third proposition: Emergence of a dominant TEP shapes the socio-technical landscape which then reinforces directionality of MLP dynamics within systems & multi-regime dynamics
  - Landscapes does not provide structuration but a gradients for action (operates through shocks, trends and as a technotope)
  - Landscapes consist of sedimented layers; Past TEPs do not disappear but become embedded in the landscape
  - During first 5 surges TEPs have been contributing to a cumulative trajectory based on resource intensity, fossil fuels and labor productivity (capital intensity)
  - Portfolios of directions continue to exist, history consist of eco-system, e.g. multiple niches, regimes, and layered landscape.

Transforming Innovation

Creative Destruction or Destructive Creation?

CELEBRATING SPRU 1966–2016

Thank you.