Nevertheless, I persist in the claim that cratons, their margins, and their interior basins "do not just lie there" passively waiting to be encroached upon by rising sea levels or laid bare to erosion as sea levels fall. Students and practitioners of sequence stratigraphy are, for the better or worse, recorders and interpreters of tectonic evolution.

L.L. Sloss "Forty years of sequence stratigraphy" Geological Society of America Bulletin, v. 100. p. 1661-1665, Nov. 1988 "Water flows downhill" G.P. Allen

....and the sediment supply with it as well

Sedimentary environment and associated facies

Irfan Cibaj Total Indonesie



Earth physiography - distribution of continental shelves – narrow pericontinental shelves rimming the continents.

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From the mountains





6 - Reference, date, place

Friday, 7 October 2011

Himalayan mountain belt

... through the rivers



Meandering belt : Lena river (photo taken from the plane 10 000 m high)





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धरगन Dharan Mag बिराटनगर Biratnaga Photos Nagaland Biha Meghalayi or a set of the set of Manipu Bangladesh हाको Dhakar Jharkhand Tripura Mizoram West Khulna Kolkata Myanmar (Burma) Orissa - Map data 02011 G Ononie

Huge amount of very raw clastic material is drained from Himalayas to the ocean through a very short distance. The shelf is 200 km wide and a canyon drains turbidite material to the deep basin.



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Indus fan around 2000 km long





Indus fan around 2000 km long



MCS LINE 12



Fig. 6.—Multichannel seismic series line showing several layers of vertically stacked channel levee complexes. CH = cations of channels flanked by levees. (A) Uninterpreted section. (B) Interpreted section (modified from Courses and Kolla, 1964)



Mahakam river, the longest river of Indonesia. Makasar strait



Jawa sea and south China sea – a huge shelf area in between many micro plates



13 - Reference, date, place

What is a Delta?





SCHEMATIC MORPHOLOGY OF AN IDEALISED ACTIVE DELTA SYSTEM

(From Allen & Mercier, 1988)

14 - Reference, date, place







Fluvial dominated delta: northeast Java









Fluvial dominated delta: Volga, Caspian sea

Fluvial dominated delta: Yellow River, northeast China





Wave dominated deltas

Southeast Adriatic coast, Albania



Jalan Sentosa, Samarinda – outcrop example of a complete deltaic cycle





Exemples of individual deltaic cycles from the GR logs





Fossil deltaic cycles as recorded in rocks



Outcrop example of stacked individual deltaic cycles

20 - Reference, date, place



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Many environments in the continent, many environments in the shelf





Tectonics condition the fluvial plain and the creation of many lakes







Contrasting relief created by the tectonic activity as well as sedimentary processes





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Lakes are small compared with sea basins. Meanwhile they are huge areas constituted by a variety of microenvironments



Google maps

Yangtze river and estuary







Sandstone sedimentary facies



Intrepretation of sedimentary environment :

storm and wave dominated shelf



Shelf sand showing wave cross-stratification







Scouring surface with clasts on top of it

















Stacking pattern of sediments





Intrepretation of stacking pattern :

Prograding 5th order shallow marine parassequence

Stop 3 – Sungai Kunjang – shelf parasequences



TOTAL



Dominating North to South current creates littoral barriers and lagoons





Dominating North to South current creates littoral barriers and lagoons

TOTAL













Complicating pattern of water flow, salinity distribution, temperature distribution, tidal direction and sediments distribution. Extreme changes in water depth, from 100 to 10 000 m, in a space of 2000 km

TOTAL











Narrow shelf, canyon and complicated pattern of deep sea sediments distribution.





Narrow shelf, canyon and complicated pattern of deep sea sediments distribution.





Outcrop 3 : Bukit Pinang village – slope turbidites









Sand beds and mass flow, slope turbidites

49 - Reference, date, place





Thin bedded turbidites – a fining upwards Bouma sequence

Outcrop 3 : Bukit Pinang village – slope turbidites

TOTAL