

Maturity of electronic commerce : A review of the principal models

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ICEB + eBRF 2006

- The object of this article is to present the most cited maturity models and the organizational evolutions, instigated mainly by Internet and electronic commerce.
- We will observe with these theories, how companies become progressively more flexible, more externalized, less centralized within a network, due to e-commerce.
- This article is a useful analytical framework for describing the company position on electronic commerce.

- **Electronic commerce and Internet are at the origin of new, inter-organizational relations and have imposed major changes within companies while offering important opportunities for growth.**
- **Recognized and adopted by academic and professional circles, the maturity models in electronic commerce allow to understand the progression of information technologies and systems of companies**

- Long before the emergence of Internet and electronic commerce, the developing stages of computers have been studied by researchers
- Richard Nolan is considered to be the first researcher to provide a structured outline to explain the computing evolution within organizations
- the original model consisted of 4 phases (Initiation, Contagion, Control and Integration).
- Later, due to the emergence of new applications such as database systems, the initial model was altered to include new phases : Data Administration and Maturity In general, these stages of computer development show how information technologies along with organizational and managerial strategies evolve with time
- Nolan's model has undergone several improvements and is presented under different forms and versions

- Nolan's model was frequently adjusted and adapted to the managerial reality of the 90s and to the information technologies' evolution during the last ten years
- New maturity models, better adapted to the realities of electronic commerce, have been developed by other researchers and practitioners.
- Recent research on growth phases and electronic commerce has shown the usefulness of these models in describing the company position in terms of electronic commerce development and of its possible development in the future
- Besides its descriptive aspect, studies on maturity models help companies choose adequate strategies for moving into new, more advanced phases

McKay et al. (2000), towards the complete integration of the organization

- Stage 1: No presence
- Stage 2 : Experimental online presence
- Stage 3 : Interactive online presence.
- Stage 4 : Electronic commerce.
- Stage 5 : Internal integration..
- Stage 6 : External integration.

Tableau : Principales composantes des étapes du modèle de McKay et al.(2000b)
Résumé par Bijayendrayodhin et al (2002)

	Etapes					
	1	2	3	4	5	6
Principales composantes						
Site Web informationnel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Contact par courrier électronique	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Base de donnée Web pour fournir et recevoir des information de la part des clients.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Commande électronique (courrier électronique et Web)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Paiement électronique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Système de base de données pour lier les systèmes du back et du front office avec entièrement intégrés	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Arrangements logistiques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Extranet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- **Earl (2000), Toward a learning organization**

Stage 1: External communication

Stage 2: Internal Communication

Stage 3: Electronic Commerce

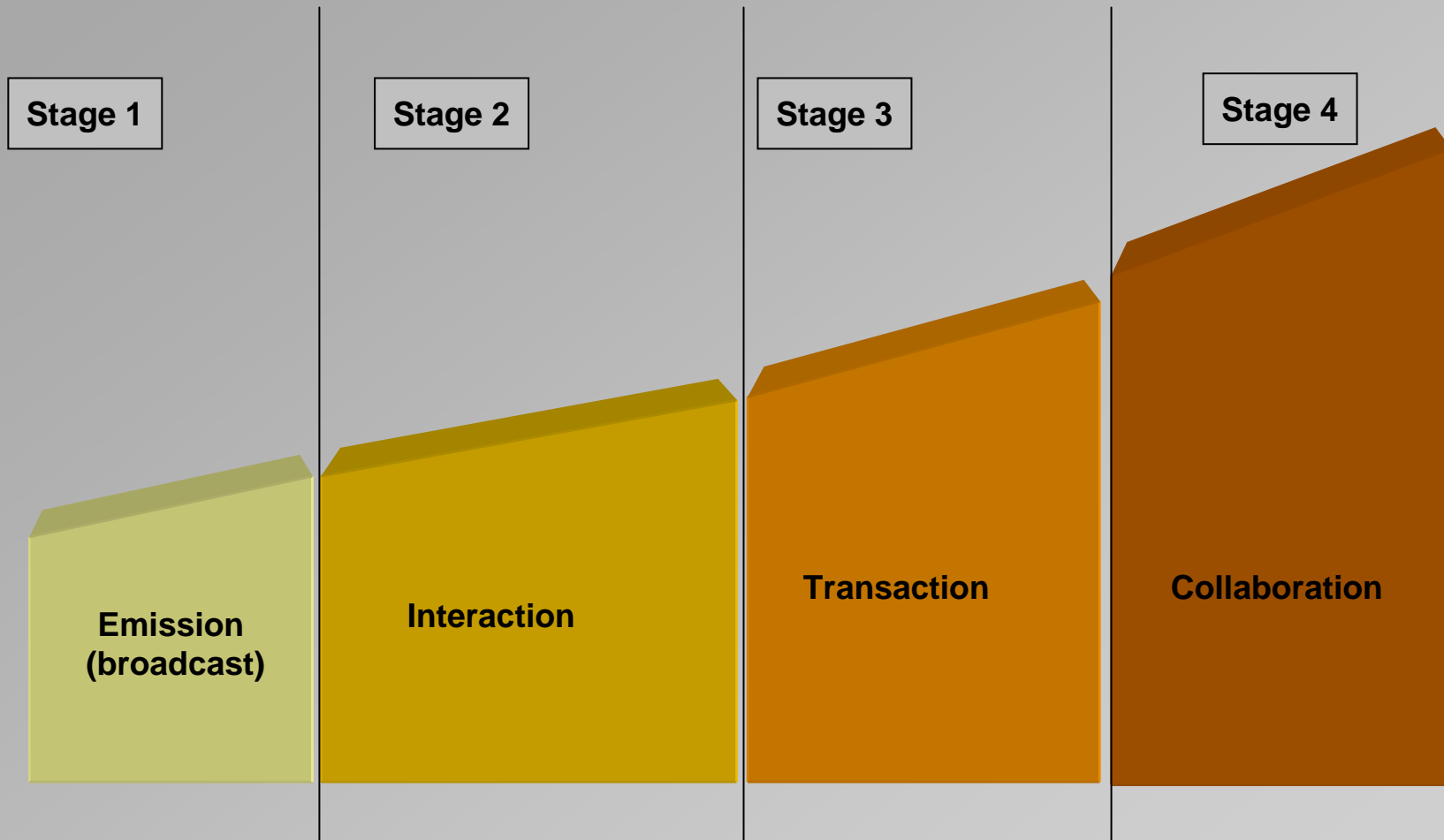
Stage 4: Electronic Business

Stage 5: E-Enterprise

Stage 6: Transformation

TO E-BUSINESS STAGES OF GROWTH

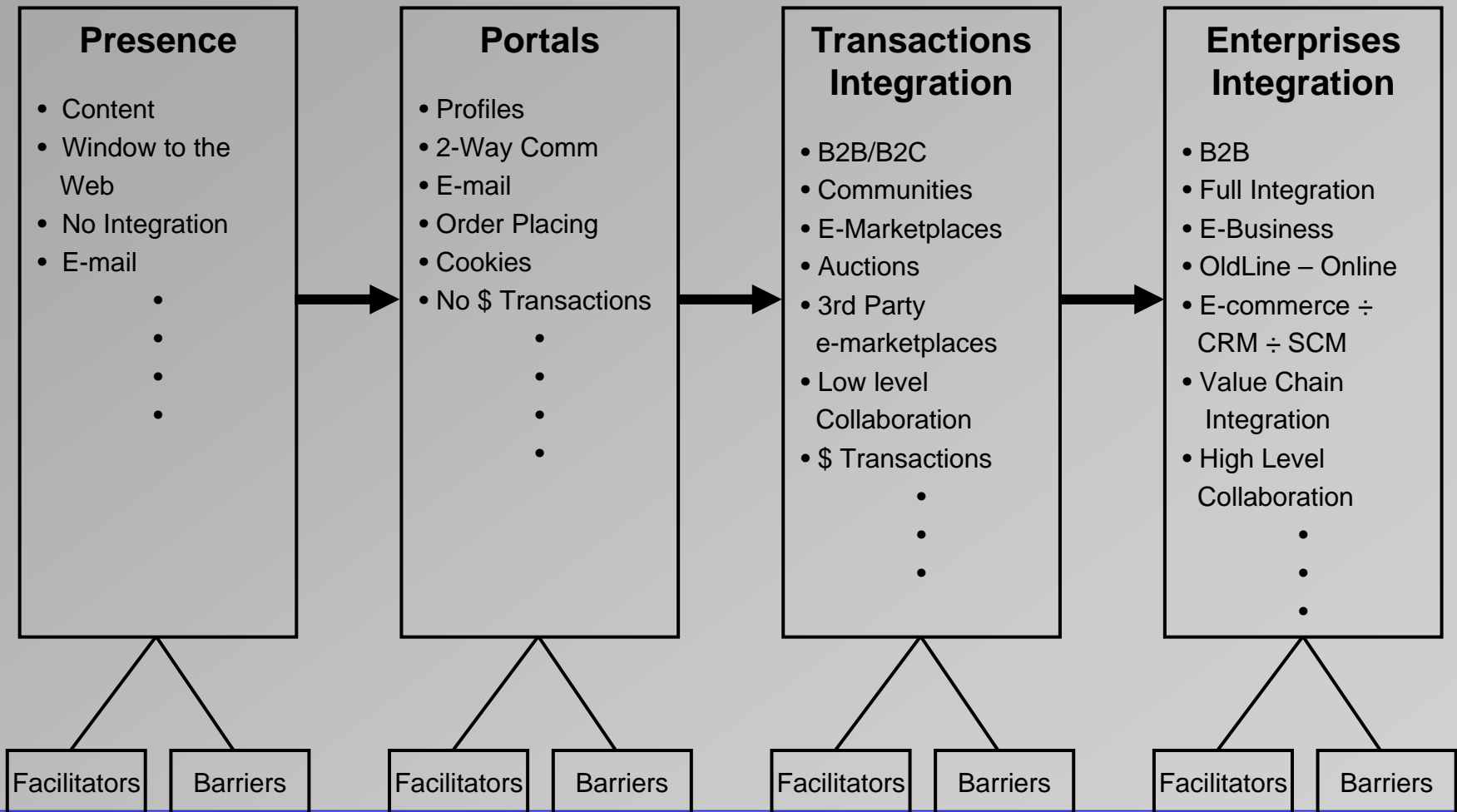
•Rayport and Jaworski (2002), towards e-collaboration



TO E-BUSINESS STAGES OF GROWTH

•Rao and al. (2003), towards a perfectly integrated organization

Stages of E-Commerce Development and their characteristics



Conclusion

- All the above mentioned maturity models describe a logical evolution of the TIC within the company.
- In more advanced maturity stages, one refers mainly to integration (internal and external), network and inter-organizational cooperation. With these advancements, companies tend to turn towards less centralized models, externalized and network operated.
- The new models mentioned in this article take into account the reality of Internet and electronic commerce. They show that the company organization is largely influenced by its implementation of electronic business.
- All these maturity models, even though they differ on some points (such as the number of phases or on whether to take into consideration or not, the traditional systems), allow to understand and describe the implementation of the company's electronic business.
- These models demonstrate that the organization must constantly evolve, at the same pace as the evolution of electronic commerce.