



International Conference

# Solar Energy and Architecture Innovation and Development

## Solar Energy Industry in Portugal

**Maria João Rodrigues**

*President of Board of Directors*





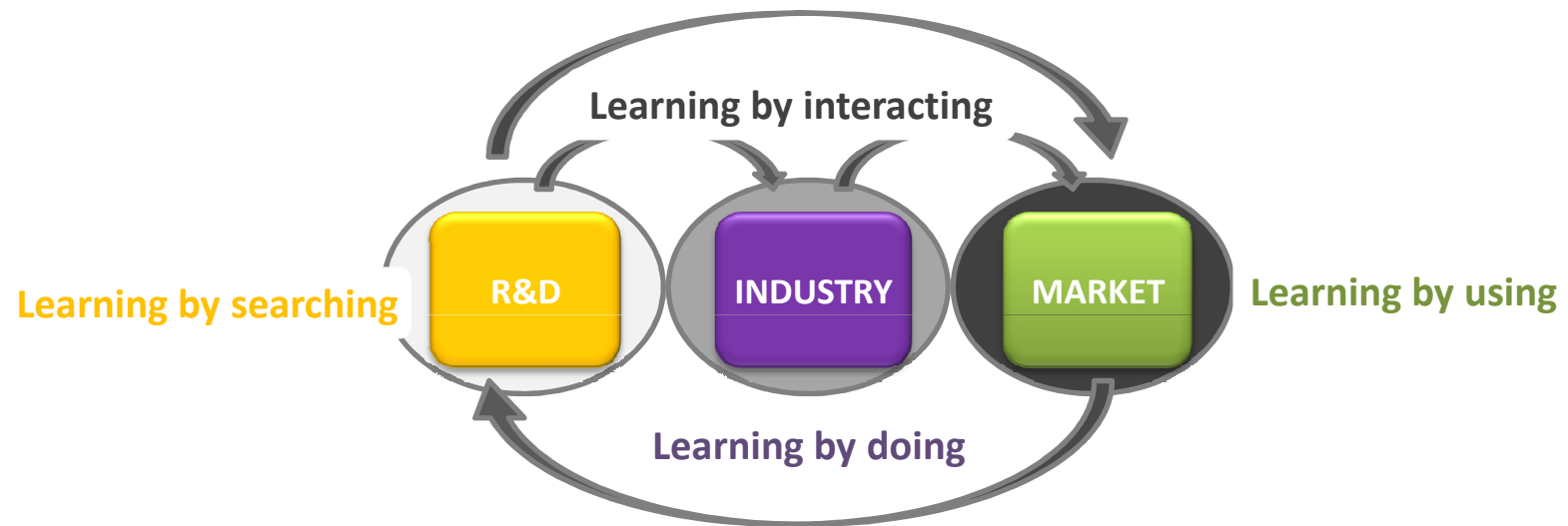
# OUTLINE

- **Framework**

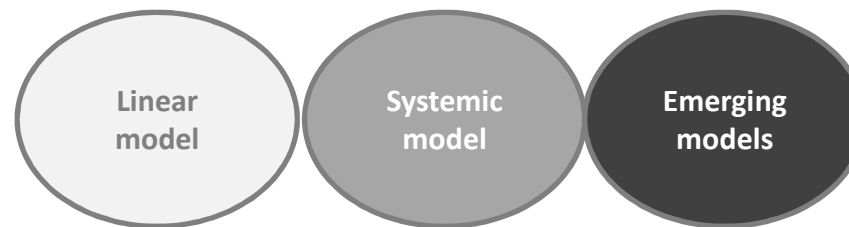
- Snapshot of Solar Industry

- Innovation in the Portuguese Solar Industry

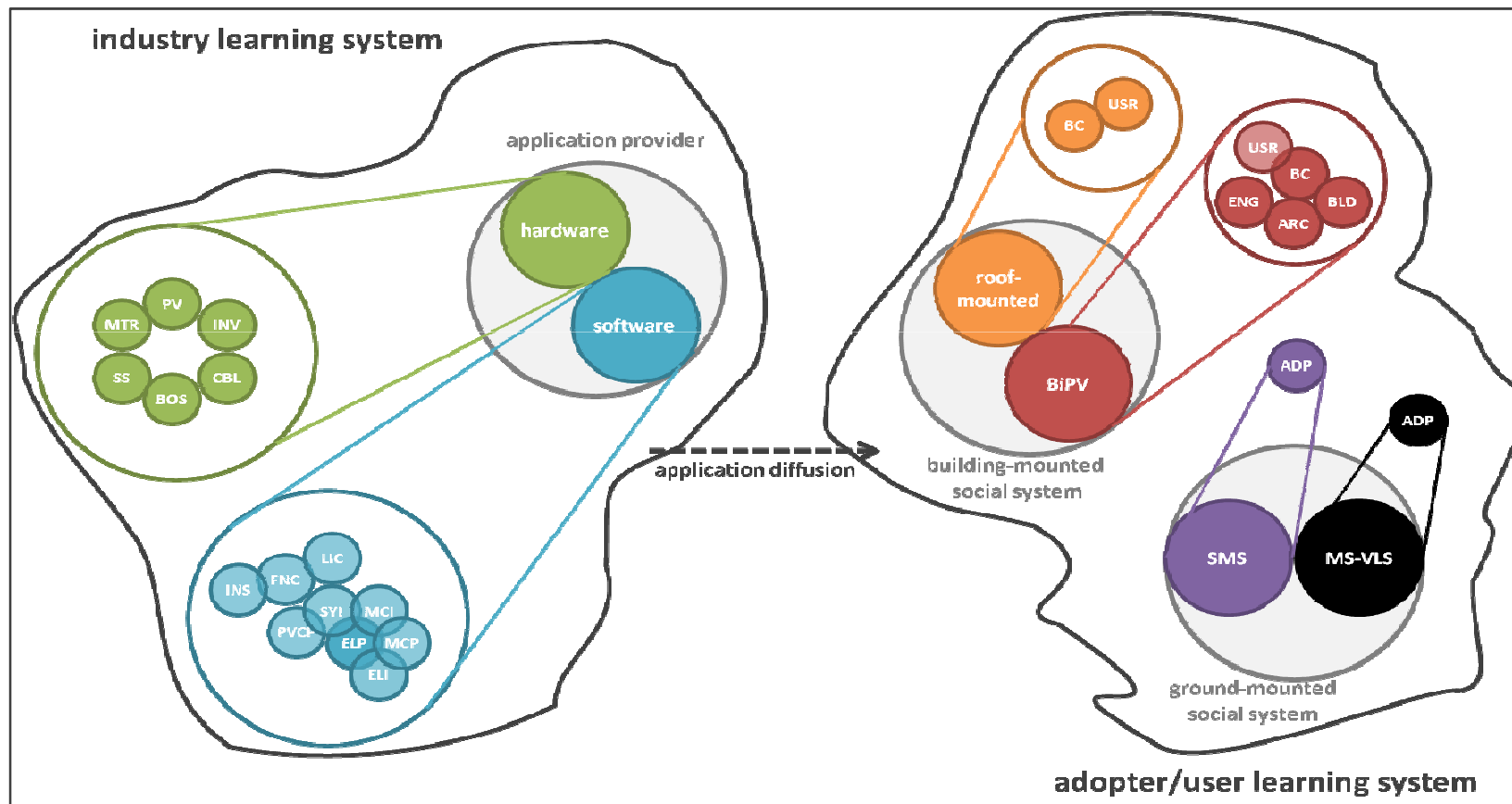
## Framework | Innovation Model



SOURCES OF INNOVATION



## Framework | Innovation Model

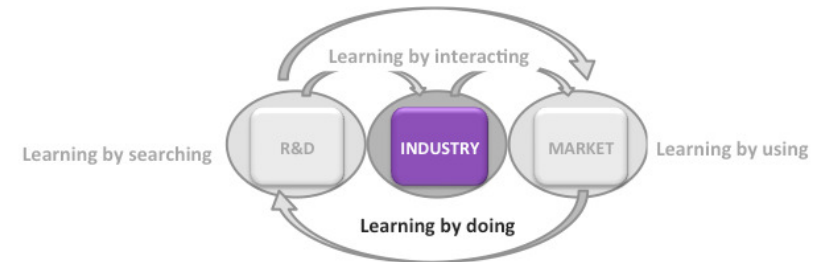




# OUTLINE

- Framework
- **Snapshot of Portuguese Solar Industry**
- Innovation in the Portuguese Solar Industry

## Snapshot of Portuguese Solar Industry



	PV	ST
manufacturers	8	20
distributors	1 000	200
installers		6 000

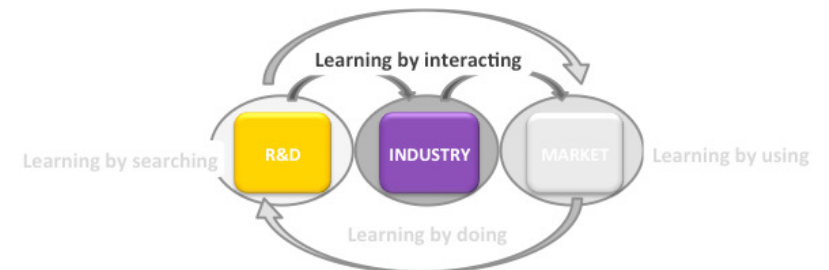
8	20
<ul style="list-style-type: none"> <li>- 4 c-Si assemblers</li> <li>- 2 TF manufacturers</li> <li>- 2 system developers (CPV)</li> </ul>	<ul style="list-style-type: none"> <li>- 5 PT companies</li> <li>- 1 solar architecture</li> <li>- Flat-plate and vaccum tubes (CPC closed)</li> </ul>



# OUTLINE

- Framework
- Snapshot of Portuguese Solar Industry
- **Innovation in the Portuguese Solar Industry**

## Innovation in Portuguese Solar Industry



Programa de Apoio	Sigla	Promotor Líder	Apoio Público Total	Ano
QREN - I&D em Co-Promoção	ELVIS	Emílio de Azevedo Campos, SA	€ 365,134.96	2011
QREN - I&D em Co-Promoção	NanoSi-PVCELLS	Solar Plus - Produção de Painéis Solares, S.A.	€ 720,625.45	2009
QREN - I&D em Co-Promoção	SolarSel	EFACEC Engenharia e Sistemas, S.A.	€ 480,432.01	2009
QREN - I&D em Co-Promoção	SolarTiles	Revigrés - Indústria de Revestimentos de Grés, Lda	€ 1,187,340.22	2009
QREN - I&D em Co-Promoção	SUNaitecVOLT	SUNATEC, Unipessoal, Lda	€ 555,886.22	2011
QREN - I&D em Co-Promoção	UNISOL	J.Prior - Fábrica de Plásticos, Lda	€ 609,930.08	2012

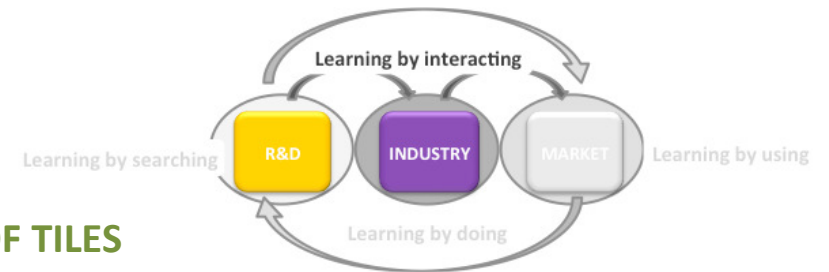
+ manufacturer-based applied reserach | system developers and process development



## Innovation in Portuguese Solar Industry



DEVELOPMENT OF PHOTOVOLTAIC SOLAR SYSTEMS IN CERAMIC CLADDING AND ROOF TILES



CERAMIC INDUSTRY



Universidade do Minho



R&D

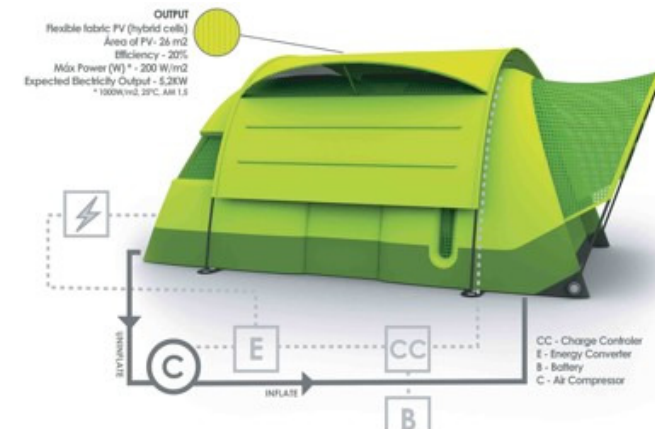
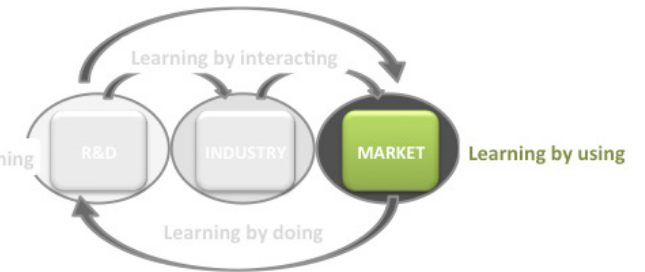
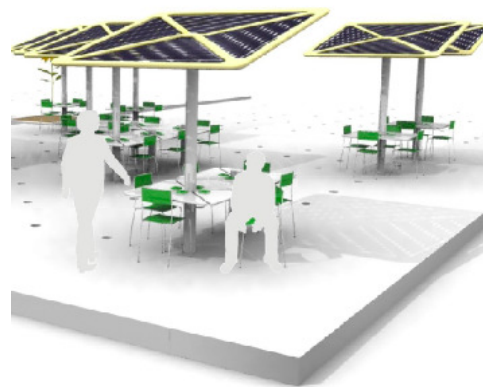
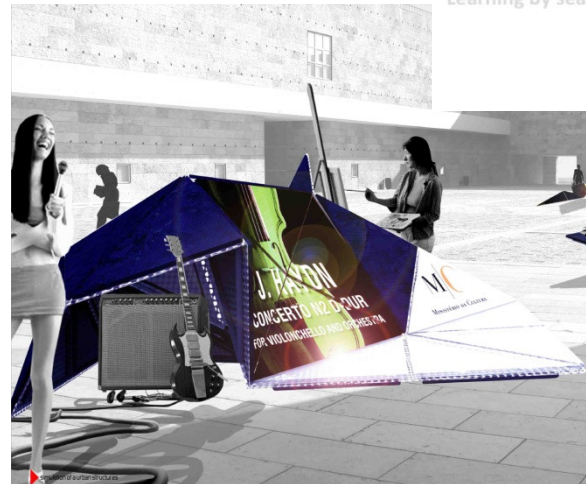


MARKET

# Solar Energy Industry in Portugal

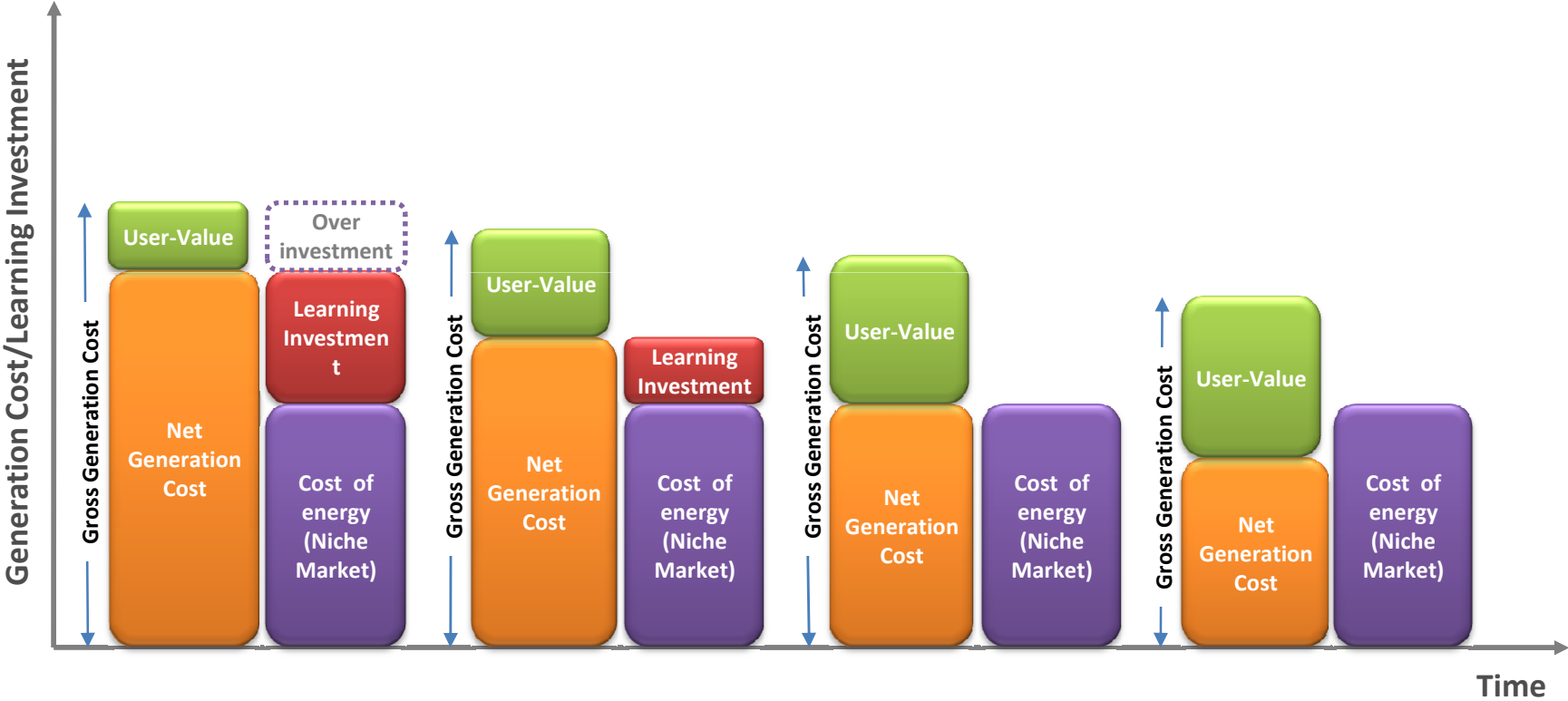
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## Innovation in Portuguese Solar Industry



Source: Rodrigues, M.J. (2009); Fernandes, J. (2008).

Value-added paths



## User education



Imagem: ©Alexandre Gandum. (2011)



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**THANK YOU!**

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