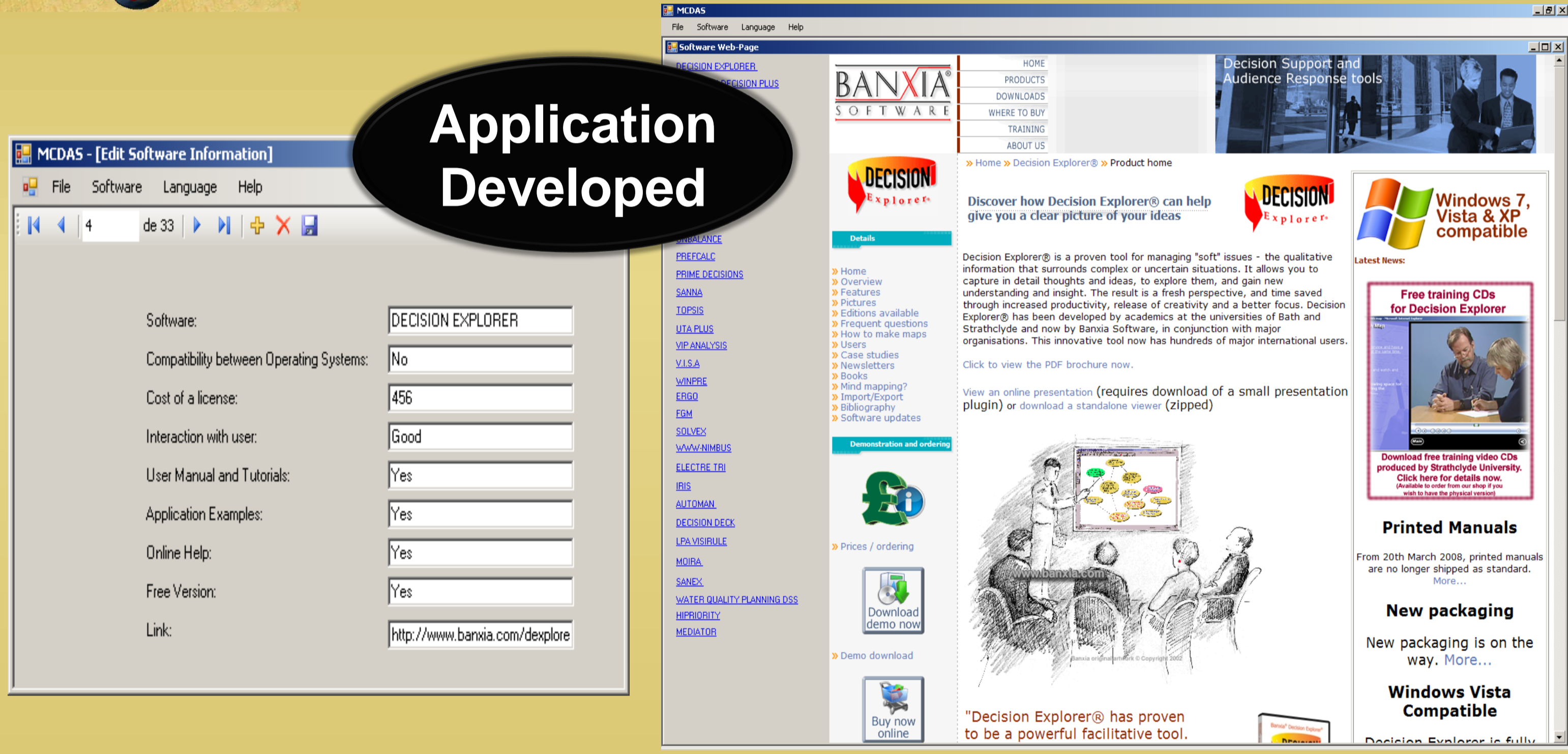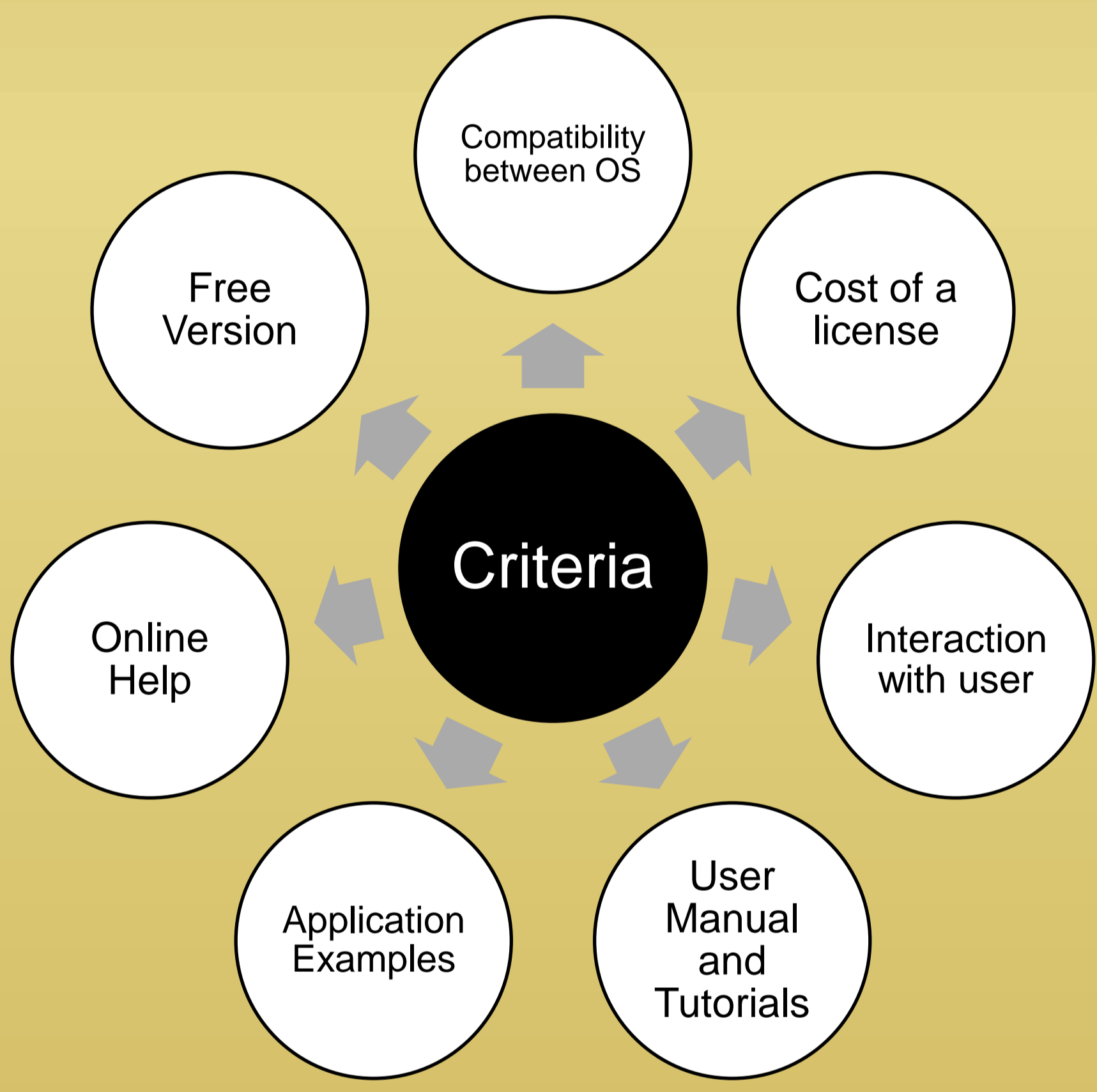# A Multicriteria Decision Aid Software Application for selecting MCDA Software using AHP

University of Minho

School of Engineering

Production and Systems Department

EngOpt 2010
2nd International Conference on Engineering Optimization
LISBON
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MCDA Software: Which one to choose?

Application Developed

Criteria
- Compatibility between OS
- Cost of a license
- Interaction with user
- User Manual and Tutorials
- Application Examples
- Online Help
- Free Version

Example and Results

Saaty's Scale

Comparison	Preference to be given
If x is as important as y	1
If x is a little more important than y	3
If x is much more important than y	5
If x is far more important than y	7
If x is absolutely more important than y	9

Pairwise comparison matrix and normalized matrix between alternatives considering the criterion cost of a license

	S 0€	I 1000€	M 1750€	S 0€	I 1000€	M 1750€	Sum of lines	Average
S: SANEX 0€	1	7	9	0.8	0.84	0.69	2.33	0.78
I: IRIS 1000€	1/7	1	3	0.11	0.12	0.23	0.46	0.15
M: MACBETH 1750€	1/9	1/3	1	0.09	0.04	0.08	0.21	0.07
∑=	1.25	8.33	13	1	1	1	3	1

Pairwise comparison matrix between criteria and normalized matrix

	CL	COS	UI	CL	COS	UI	Sum of lines	Average
CL: Cost of a license	1	3	5	0.65	0.69	0.56	1.9	0.63
COS: Compatibility between Operating Systems	1/3	1	3	0.22	0.23	0.33	0.78	0.26
UI: User Interaction	1/5	1/3	1	0.13	0.08	0.11	0.32	0.11
∑=	1.53	4.33	9	1.00	1.00	1.00	3	1.00

Best Software

Cost of a license 0.63 | Compatibility between OS 0.26 | User interaction 0.11

| S 0.78 | I 0.15 | M 0.07 | S 0.09 | I 0.09 | M 0.82 | S 0.72 | I 0.14 | M 0.14 |

AHP hierarchical structure with the priority weights
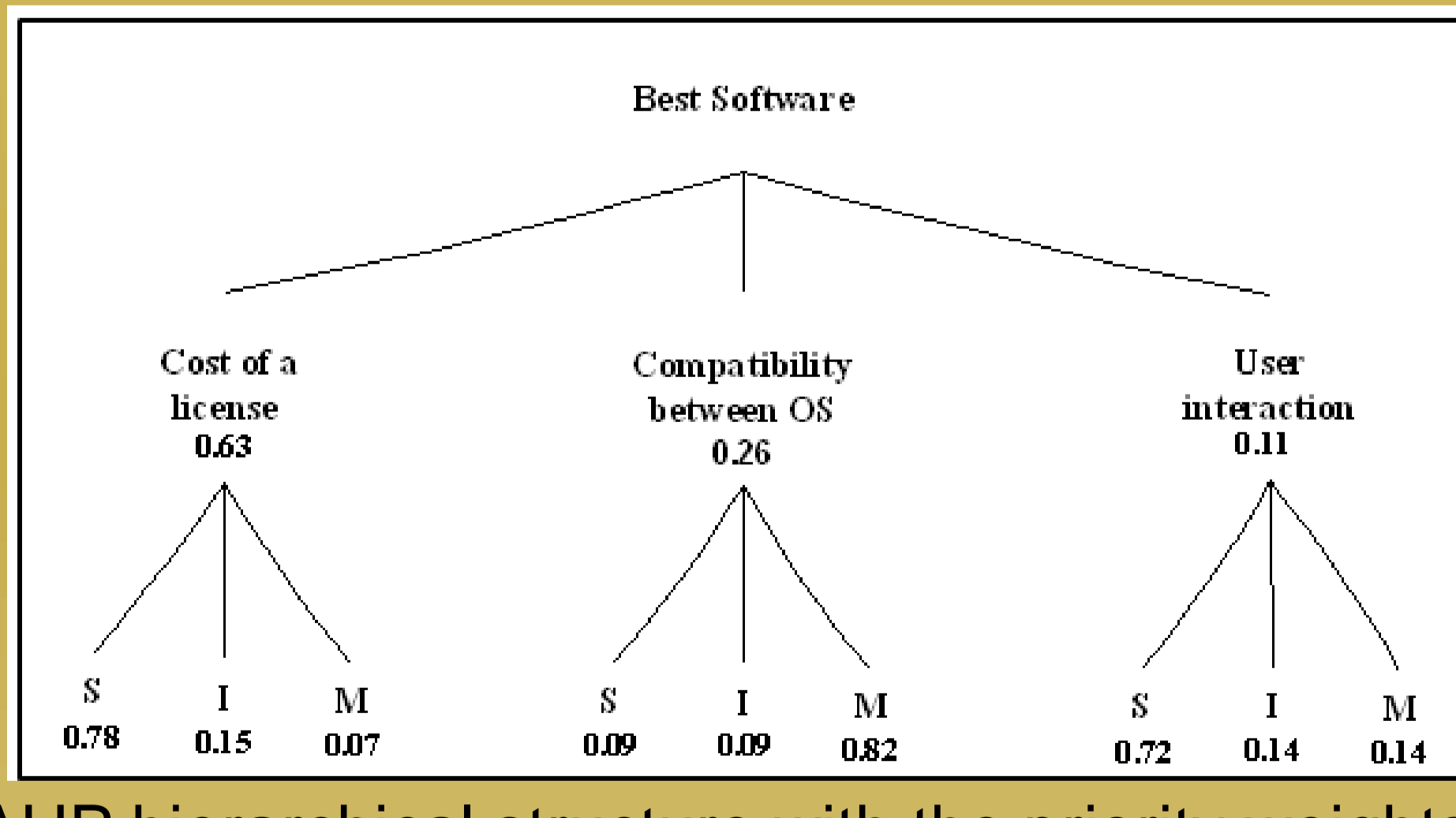
SANEX	0.59	1º
IRIS	0.13	3º
MACBETH	0.27	2º

Final priority weights and ranking of the alternatives

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