



**Study on job offers in the ICT field in Spain**  
**1<sup>st</sup> Edition, 1993-1995**

Summary of relevant data

November 2008

**Dr. Luis Fernández-Sanz**

[www.cc.uah.es/lufesa](http://www.cc.uah.es/lufesa)



Under a [Creative Commons](https://creativecommons.org/licenses/by-nc-sa/4.0/) license

## Characteristics

- Sample: 1046 job ads published in national newspapers in Spain from January 1993 to March 1995.
- Definition of Job profile: a specific candidate profile for a specific position of any type in the ICT field which can be assumed by computing professionals except:
  - Those which explicitly require other degrees or exclude computing people.
  - Sales work force without specific requirements of educational level.
  - Junior profiles for candidates without previous experience.
- Data do not allow inferring real employment vacancies but opportunities for candidates.
- Job ads are not investigated to check if they are adjusted to reality although those ones which arouse doubts about their correctness were not processed.
- Total number of job ads 1046 with the following sources of information:
  - Written in Spanish: 1007 (96,24%)
  - Written in English: 35 (3,34%)
  - Written in French: 2 (0,19%)
  - Written in English and French: 2 (0,19%)
- Location (if not specified, contact data are taken as reference):
  - Madrid: 922 (88,14%)
  - Barcelona: 91 (8,69%)
  - Rest of Spain: 28 (0,26%)
  - Other countries: 5 (0,047%)
- Travelling required: 101 (9,65%).

## Sample data

Sector de empresa	Ofertas	%	1993	%	1994	%	1995	%
Computing/IT	431	41,2%	70	24,4%	268	47,3%	93	50,5%
Not known	391	37,4%	151	52,6%	186	32,8%	54	29,3%
Consultancy	65	6,2%	22	7,7%	35	6,2%	8	4,3%
Others	60	5,7%	20	7,0%	31	5,5%	9	4,9%
Finance	36	3,4%	3	1,0%	23	4,1%	10	5,4%
Government	14	1,3%	4	1,4%	10	1,8%	0	0,0%
Retailing	13	1,2%	8	2,8%	1	0,2%	4	2,2%
Education	10	1,0%	5	1,7%	5	0,9%	0	0,0%
Telco	10	1,0%	2	0,7%	2	0,4%	6	3,3%
EU	8	0,8%	2	0,7%	6	1,1%	0	0,0%
Engineering	6	0,6%	0	0,0%	0	0,0%	0	0,0%
	1046	100,0%	287	100,0%	567	100,0%	184	100,0%

Table 1. Economic sectors for job ads

Position	Job ads
Security administrator	3
Systems analyst	107
Functional analyst	20
Analista organico (analyst-programmer)	20
Analys programmer	206
Repairing assistant	1
Trainee	7
Sales agent	19
Communications consultant	8
IT consultant	69
Computing director	20
Graph designer	2
Trainer	3
Communications engineer	6
Systems engineer	7
Software Engineer	16
Software development director	3
Operation manager	1
project manager	55
Not known	52
Computer operator	18
Others	29
Computing teacher	8
Senior programmer	179
Database manager	6
Communications manager	2
Computing manager	21
Outsourcing manager	1
Development projects manager	22
User assistance technician	6
Hardware technician	2
Maintenance technician	12
Microcomputers technician	14
Junior systems technician	6
Senior systems technician	72
Software technician	23

Table 2. Positions

### ***Technical requirements***

Requirement	Ads	%
CLIPPER	47	4,49%
SAP	42	4,02%
POWERBUILDER	38	3,63%
CSP	20	1,91%
OSF/MOTIF	19	1,82%
SYNON/2	19	1,82%
NS/DK	17	1,63%
CLIENT/SERVER ENVIRONMENT	16	1,53%
4GL	16	1,53%
X-WINDOWS	16	1,53%
UNIFACE	6	0,57%
WINDOWS PROGRAMMING	4	0,38%

Table 3. Environments, platforms and business applications

Requirement	Ads	%
ORACLE	162	15,49%
DB2	151	14,44%
ADABAS	110	10,52%
NATURAL	109	10,42%
INFORMIX	77	7,36%
SQL	57	5,45%
IMS	41	3,92%
SYBASE	38	3,63%
INGRES	27	2,58%
R.D.B.	27	2,58%
DBASE IV	25	2,39%
DATA BASES	16	1,53%
ACCESS	15	1,43%
FOXPRO	15	1,43%
OBJECT ORIENTED DAT BASES	11	1,05%
DATAFLEX	4	0,38%
MULTIBASE	2	0,19%
RELATIONAL DATABASES	1	0,10%
RMS	1	0,10%

Table 4. Databases

Requirement	Ads	%
CICS	127	12,14%
NOVELL	76	7,27%
COMPUTER NETWORKS	70	6,69%
TCP/IP	54	5,16%
COMMUNICATIONS PROTOCOLS	38	3,63%
LAN	27	2,58%
X.25	26	2,49%
WAN	18	1,72%
SNA	14	1,34%
LAN MANAGER	14	1,34%
NETVIEW	12	1,15%
INTERNET	10	0,96%
COMMUNICATIONS HARDWARE	10	0,96%
OSI	10	0,96%
COMMUNICATIONS DEVICES	5	0,48%
X.400	5	0,48%
CABLING	4	0,38%
DECNET	4	0,38%
IPX	4	0,38%
COMMUNICATIONS SOFTWARE	4	0,38%
LAN TOKEN RING	3	0,29%
LAN SERVER	2	0,19%
ROUTERS	2	0,19%

Table 5. Communications

Requirement	Ads	%
COBOL	176	16,83%
C	166	15,87%
C++	93	8,89%
VISUAL BASIC	76	7,27%
RPG	61	5,83%
FORTRAN	21	2,01%
ASSEMBLER	14	1,34%
PASCAL	11	1,05%
PROGRAMMING LANGUAGES	5	0,48%
BASIC	3	0,29%
PICK	2	0,19%
ADA	2	0,19%

Table 6. Programming languages

Requirement	Ads	%
CASE TOOLS	79	7,55%
METHODOLOGIES	49	4,68%
OWN COMPANY METHODLOGY	26	2,49%
PROJECT PLANNING TOOLS	8	0,76%
EXCELERATOR	4	0,38%
OBJECT ORIENTED PROGRAMMING	4	0,38%
DATA MODELS	2	0,19%
RACF TOOLS	1	0,10%
MERISE	1	0,10%
YOURDON	1	0,10%

Table 7. Software engineering methods, tools, etc.

Requirement	Ads	%
IBM AS-400	65	6,21%
AS/400	60	5,74%
IBM 30XX	23	2,20%
IBM S.3X	11	1,05%
SUN	11	1,05%
MAINFRAMES	11	1,05%
IBM 43XX	10	0,96%
VAX	7	0,67%
IBM 9XXX	5	0,48%
MAINFRAME (HEWLETT PACKARD)	5	0,48%
BULL	5	0,48%
TANDEM	4	0,38%
HARDWARE	4	0,38%
PC (& COMPATIBLE SYSTEMS) HARDWARE	4	0,38%
MICROVAX	3	0,29%
MAINFRAME (NISYS)	3	0,29%

Table 8. Hardware

Requirement	Ads	%
UNIX	250	23,90%
MVS	113	10,80%
WINDOWS	102	9,75%
DOS	63	6,02%
VMS	55	5,26%
OS/2	49	4,68%
WINDOWS-NT	30	2,87%
AIX	15	1,43%
VTAM	14	1,34%
JCL	11	1,05%
WANG VS	2	0,19%
OPERATING SYSTEMS	1	0,10%

Table 9. Operating systems

Requirement	Ads	%
WORDPERFECT	8	0,76%
NCP	8	0,76%
MICROCOMPUTING	8	0,76%
OFIMÁTICA	8	0,76%
EXCEL	7	0,67%
SOFTWARE	7	0,67%
LOTUS 1-2-3	6	0,57%
SPREADSHEET	5	0,48%
ARC/INFO	4	0,38%
WORD PROCESSORS	4	0,38%
IMAGE PROCESSING	3	0,29%
WORD	3	0,29%
G.I.S.	3	0,29%
BRIDGES	3	0,29%
HARVARD GRAPHICS	2	0,19%
PRESENTATION SOFTWARE	2	0,19%
PAGEMAKER	1	0,10%
CAD/CAM	1	0,10%
THEOS	1	0,10%
COMPUTER ASSISTED LEARNING	1	0,10%
SECURITY	1	0,10%
DATA PROTECTION LEGISLATION	1	0,10%
AUTOEDITION	1	0,10%

Table 10. Miscellaneous category

### ***Non technical requirements***

Requirement	Ads	%
ANY DEGREE	135	12,91%
LICENCIADO EN INFORMÁTICA (COMPUTING HIGHER DEGREE)	92	8,80%
LICENCIADO (HIGHER DEGREE)	64	6,12%
TITULADO SUPERIOR (HIGHER DEGREE)	62	5,93%
DIPLOMADO TÉCNICO (B.S.)	29	2,77%
INGENIERO TELECOMUNICACIONES (TELCO ENGINEER)	27	2,58%
F.P. TÉCNICA (TECHNICAL VOCATIONAL TRAINING)	19	1,82%
LICENCIADO EN ECONÓMICAS (ECONOMY DEGREE)	6	0,57%
INDUSTRIALES (INDUSTRIAL ENGINEERING DEGREE)	6	0,57%
LICENCIADO EN FÍSICAS (PHYSICS DEGREE)	6	0,57%
INGENIERO (ENGINEER DEGREE)	5	0,48%
INGENIERÍA TÉCNICA (TECHNICAL B.S.)	3	0,29%

Table 11. Educational level

Requirement	Ads	%
ENGLISH	367	35,09%
FRENCH	38	3,63%
GERMAN	9	0,86%
FOREIGN LANGUAGES	7	0,67%
SPANISH	4	0,38%
ITALIAN	2	0,19%

Table 12. Language knowledge