media & telecom. consulting

European Sport Market Analysis 2004

Version 3/February 04

Introduction

- While focusing on Europe, the purpose was to make zoom in on current sports DAM projects and to identify the most important competitors in this market.

Executive summary

- In section 1, we explain who we contacted, and why, in the course of our research into sports markets. We explain the reasoning behind out choice of 6 main players:
  - TV-channel sports departments
  - Service providers (OB trucks)
  - Leagues and governing bodies
  - Clubs
  - Stadia
  - Sports marketing companies

- We also explain our methodology for identifying sports DAM applications among references of the most important suppliers of servers, storage solutions, OB-van equipment and media asset management software.

Executive summary

- At section 2, we give some basic information about the sports business, explaining among other things:
  - The relationship between the 6 categories of sports market players (clubs who own their own stadia, TV stations who subcontract production to services providers, etc.)
  - The “big money” flowing into sports, especially increases in TV rights payments
  - The concentration in Europe of 90% of the money in 3 sports (Soccer more than 80%, Tennis, Formula1) and 2 events (Tour de France, Olympic games).
  - That clubs and and even players are becoming brands in their own right in the 3 rich sports.
  - The importance of stadia, at crossroads of many industries’ hopes
  - The new channels of TV distribution on big screen and bars
  - The evolution of rights ownership from the league, to the clubs and ultimately to marketing companies such IMG.
  - That rights ownership drives re-utilisation of video and therefore DAM applications
  - That club budgets is for the moment mainly used for purchasing players, and that other expenses such as DAM may be less attractive than a new striker
  - That subcontracting to service providers is the rule for live sport

Executive summary

- In section 3 we give our inventory of the 185 sports DAM applications in the world, identifying 9 categories of application:
  - TV-channel's live & highlights production, magazine production, sports news production, sports video archive
  - Leagues and clubs video coaching, heritage centers
  - League, clubs, marketing companies' "distribution factory" where all video is stored for distribution to any media such as TV, mobile, Internet, big screens, corporate hospitality
  - Stadium in-house entertainment
  - Sport Internet portals.
- We analyse the most frequent applications: video coaching is up to 48%, live & highlights 26%, in-house entertainment is 15 %
- Clubs are the most frequent users with 44 % of applications followed by TV Channels at 26%
- North-America constitutes 55 % of cases, Europe 35%, Asia-Pacific 9%.
- We discovered that where ingesting items of information is sport-specific, it is usually delivered by DAM suppliers through customisation of a single IT application, except for coaching where parts are and must be specific: statistics and presentation, simulation, graphic analysis tools.

Executive summary

- Contrary to our expectations, “score, clock and timing” applications do not interface with DAM application except in one QDI project at the French Tennis Association. Those systems are for the moment only interfaced with the broadcast on-air graphic tools for live production.
- We notice that all 9 applications are made of the same 14 component basic functions (such as live scripting, editing, web distribution ...): 3 functions for live, 6 for production, 5 for content distribution
- We also notice that only 3 % of DAM applications cover multiple categories of application, such as doing live & highlights production while at the same time preparing archiving. There are currently more “islands” than optimal workflow: no smart re-utilisation of metadata, but a lot of repetitive inputting.

Executive summary

- In section 4, we regroup the 9 categories of application into 4 main segments:
  - Highlights production (Live TV, TV magazine and archive, and stadium in-house entertainment) where main players are server suppliers such as EVS, Leitch, Grass Valley, and Dixon for stadia
  - Sports news where suppliers are the same as for news: Sony, Avid, Leitch, Grass Valley
  - Coaching : where Pinnacle Teamsports, Dixon Sports, Sportstec are leaders
  - Distribution repository or factory: video repository/heritage centre for distribution: an emerging segment where TWIi, a subsidiary of IMG is a pioneer with a single but remarkable application for the distribution of content managed by IMG, and where QDI and Blue Order have also a single reference.
- We estimate the 4 segments represent a market size of $40, starting with $8m in 2004.

1. Methods

- There is a range of “stored and indexed video” as well as “rich media” sports applications among references of
  - The main server suppliers: Orad, Pinnacle, EVS, Avid, Quantel, Leitch, GVG, Sony, Omneon, Seachange, SGI as well as SAN mass storage suppliers Sony, IBM, Storagetek, Adic, Front Porch, SGL, SGT
  - The MAM suppliers QDI-Harris, Blue Order, IBM, Ancept, Ardendo,
  - OB van suppliers: Ross, D-link, Thomson

1. Methods

- After compiling this world-wide list of applications, we decided to contact and to visit a certain number of key players among the 6 following categories involved in sport:
  - **A. Television channels**, such as the Sport departments of premium channels involved in sport live or News 24 Sports channels such as Plazamedia in Germany
  - **B. Outside Broadcast** companies providing video capabilities (i.e. OB Vans) and working on behalf of TV Channels or Clubs, such as Alfacam in Belgium
  - **C. Sports Leagues and Governing Bodies** such as the French Federation of Tennis
  - **D. Individual Clubs** such as Manchester United
  - **E. Stadia** such as the Luxemburg Dome
  - **F. Sports Rights Management and Marketing companies** such as IMG/TWI in the UK

1. Methods

- We contacted and/or visited 19 sites, based in 7 countries

		TV	OB van & services	Club	League	Stadium	Sports Marketing	Comments
Country	Interview							
Belgium	ALFACAM	X	X					One of the most important European videotruck companies. Has created the 2 first European TVHD channels: Euro 1080 for bars & hotels (4 hours a day), and for cinema theaters (big events). Uses the Astra satellite for transmission.
	VRT	X						Main Belgian channel for the Flemish community
	CANAL + Belgium	X						Belgian payTV channel (Vivendi group), owns sports rights
Germany	PLAZAMEDIA	X						Sport news 24 channel of Saban Group (ex-Kirch)
Spain	CASTILLA LA MANCHA	X						Government-backed regional TV station dedicated to the Castille region of Spain.
	SOGECABLE	X						Digital Pay TV Spanish group subsidiary of Prisa Group (first Press group in Spain) has merged with Canal+
Monaco	SAMIPA/FOCA		X					Videotruck TV company dedicated to motor races and Formula 1. Samipa also produces a motor races magazine for TMC, and manages transmission of Formula1 to Russia
Luxemburg	Luxemburg Dome/VPA					X		Indoor production company dedicated to this entertainment & sport arena

1. Methods

		TV	OB van & services	Club	League	Stadium	Sports Marketing	Comments
Country	Interview							
UK	Manchester United TV	X		X		X		Most important european soccer club with Real Madrid and Milan AC , Juventus
	Manchester United TV (GRANADA)	X		X		X		Owns its stadium, own TV rights, subcontract its image and TV rights to Mc Cormack TWI. Has created a TV station dedicated to the club. Playout center managed by Granada TV
	TWI INTERACTIVE	X					X	Mc Cormack manages the rights of many major events (Olympics, Soccer World Cup), many European clubs , many tennis players and athlets. Has created several TV stations TWI (broadcast on satellite/BskyB) as well as a digital distribution facility TWI Inte
	CTV Outside Broadcast (NMT group)		X					One of the most important UK OB van/video truck service provider. One of the most important UK OB van/video truck service provider. Subsidiary of National Mobile Television the most important US videotruck company

1. Methods

		TV	OB van & services	Club	League	Stadium	Sports Marketing	Comments
Country	Interview							
France	FFT French Tennis Association				X	X		FFT owns a stadium (Roland Garros) and rights of the grand slam French Open tournament
	FRANCE TELEVISIONS	X						Joint Sports Department of France2 and France3
	IEC-ASV		X					One of the main French integrator (Pinnacle) and sports OB van provider
	EQUIDIA/ Vincennes Racecourse	X			X	X		PMU, the French race organisation has created a TV (Equidia, cable and satellite channel), and owns racecourses
	TF1	X						First French premium TV channel (Bouyghes group), owns sports rights
	TV Bercy					X		Indoor production company dedicated to this entertainment & sport arena
	PSG/ Parc des Princes Paris			X		X		First league French soccer club. In France, manage its stadium ("Parc des Princes", owned by Paris Township). The French Soccer League owns all TV rights for the moment.
	CANAL+	X						French payTV channel (Vivendi group), owns sports rights

1. Methods

- We contacted 24 people among these 6 company categories

Country	Sport	Organisation	Person	Title	Date
1. Televisions/stadium/association/Sports services providers					
France	Tennis	FFT French Tennis Association	Mehdi KOVADER	Video Operations Manager	nov-03
			Jean-Baptiste PEYRONNY	Deputy Video Operations Manager	dec-03
	All	FRANCE TELEVISION	Bernard BERLIET	Head of Video Library Sport Department	dec-03
			Olivier DUPUIS	Video Library Sport Department	dec-03
	All/Sailing	IEC-ASV	Fred RENONDO	Director Domestic Market services/rental	dec-03
	Horse racing	EQUIDIA/ Vincennes Racecourse	Eric BRION	Technical Manager	dec-03
	All	TF1	Jacques BERTHELOT	Director Operations	jan-04
	Tennis	TV Bercy	Pascal MAIFLEUX	Director Operations	jan-04
	Soccer	PSG/ Parc des Prince Paris	Jack JACQUET	Member of the board in charge of IT&video Development	dec-03
	Soccer	CANAL+	Jean-Paul BERTONI	Sport Operations	jan-04
			Pierre MAILLAT	Engineering Department	jan-04
UK	Soccer	Manchester United TV	Colin RENWICK	Chief Engineer	dec-03
	Soccer	Manchester United TV (GRANADA)	David HALL	Director Operations	dec-03
	All	TWI INTERACTIVE	Max HAOT	Senior Int.VP World Production	jan-04
	All/Soccer	CTV Outside Broadcast (NMT group)	Barry JOHNSTONE	CEO	dec-03
Belgium	All	ALFACAM	Kris DEMEULEMEESTER	Director Sports Department	dec-03
	All	VRT	Herman EERDEKENS	Head of Sports Department	jan-04
	Soccer	CANAL + Belgium	Jose BOUQUIAUX	Head of Live Operations	jan-04
	Soccer	CANAL + Belgium	Vincent DECONINCK	IT Department	dec-03
Germany	Soccer	PLAZAMEDIA	Mathias ZIEHL	Technical Manager	dec-03
Spain	Soccer	CASTILLA LA MANCHA	Luis SANZ	Technical Manager	dec-03
	All	SOGECABLE	Adolpho RAMACHA	Deputy Technical Manager	dec-03
Monaco	Formula1	SAMIPA/FOCA	Jo DERACO	CEO	dec-03
Luxemburg	All+ Entertain.	Luxemburg Dome/VPA	Didier LEROY	Engineering Director/project Kop	dec-03

1. Methods

- We contacted 12 people among integrators and vendors especially involved in sport

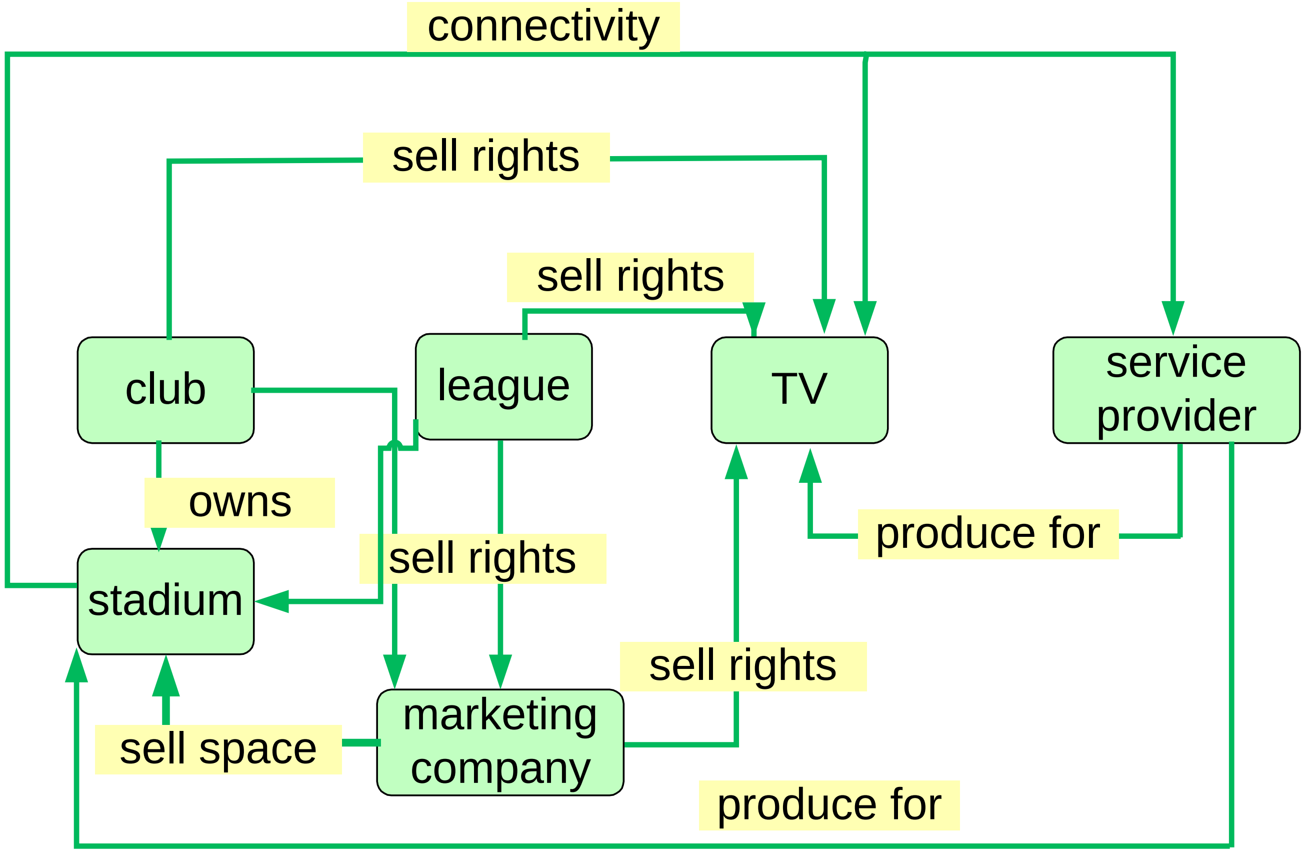
Country		Organisation	Person	Title	Date
2. Integrators/consultants					
France		SIS LINK	Yves ALLARD	Director of Operations	nov-03
UK		MARQUIS	Granby PATRICK	Managing Director	dec-03
		BROADCAST MANAGEMENT SERV.	Mike SEVERYN	Independant Consultant	jan-04
3. Vendors					
Canada	All	ROSS	Steve ROMAIN	National Key Account Manager	nov-03
Israel/Franc	All	ORAD	Guillaume GODET	Marketing Manager Sports	nov-03
France	All	M PLUS	Michel PAPELARD	Managing Director	oct-03
Spain	All	AVID Spain	Jose-Ramon RODRIGUEZ	Managing Director	oct-03
Belgium	All	EVS	Bernard STAS	General Product Manager	déc-03
	All		Mark CAEYMAEX	Area Sales Manager	déc-03
	All		Henri ALEXANDER	General Sales Manager	déc-03
France	All	QDI	Arnaud LAROCHE	Director	nov-03
USA	All	HARRIS	Fred POOLE	National Sales Manager	nov-03

2. Sport market evolution

- Through our interviews and research we gathered some key information about the sports business, concerning both the current situation and future evolution

2.1. Relationship between sport players

- 6 categories of players are involved in sports business, and this table indicates their relationships



- In England, Italy, & Spain the soccer clubs own their rights, while in France, where less money is involved, it is the French League (of Professional Soccer). In England and in Spain, clubs also own their stadia, which is not the case in France, where they are normally owned by the local authority.

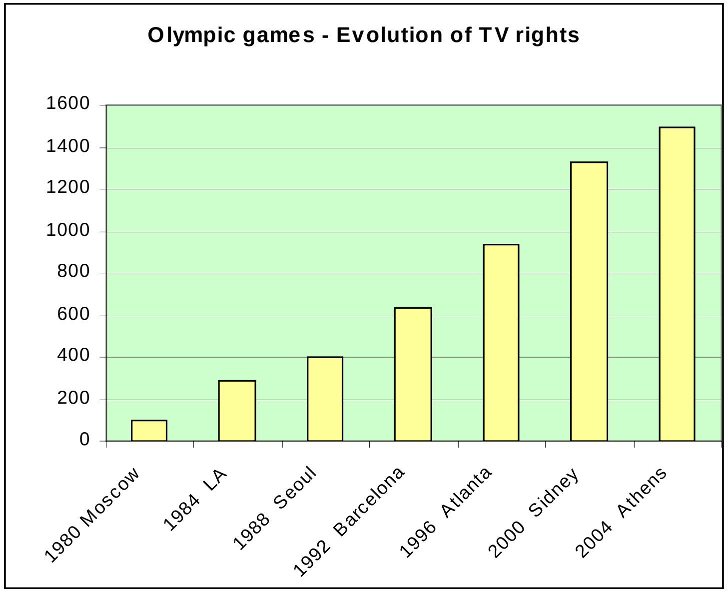
2.2. Sport is a huge business

- Revenues generated by sports rights have dramatically increased in the last 40 years, especially for the most popular sports or events. This has changed the whole sports landscape profoundly.
- TV rights exploded between 1960 and 2000.
- Ticket sales (which used to be 100 % of revenue) currently represents only 30% of a soccer club revenue in Europe on average.
- Sponsorship has also increased, representing 10% in soccer
- Derivative products represent 10% in Europe, but may be huge in case of the most famous clubs and players. David Beckham's transfer cost from Manchester United to Real Madrid was reimbursed through sales of its "Number 23" Real Madrid shirt within a single summer.
- All this is both a cause and a consequence of evolution from amateurism to professionalism, and of high TV coverage.

Soccer World Cup	1990 Italy	2002 Japan Korea
TV rights $m	500	2000

2.3. TV rights are responsible for money inflation

- TV channels compete to win sports rights and therefore contribute to the rise of prices. This is because live sport is responsible for peak audiences during the year.
  - Privately owned TV channels such as TF1 in France, RTL+ in Germany, and ITV in the UK have a differentiation strategy through live sport.
  - Some state owned channels such as the BBC and RAI also spend a big part of their budget on sport to face this competition.



Olympic games	1980 Moscow	1984 LA	1988 Seoul	1992 Barcelona	1996 Atlanta	2000 Sidney	2004 Athens
TV rights $m	100	287	403	636	935	1332	1498

2.3. TV rights are responsible for money inflation

- Live sport also became the most important driver for consumers subscribing to pay-TV. There was a major connection between Sport and the emergence of the 3 big pay TVs in Europe: Canal+, KirchGroup, and BSkyB.
- But there were also setbacks in 2002 when Kirch Group and ITV Digital went bankrupt, and when Canal+ had financial difficulties. Many consider that the value of sporting TV rights has reached a maximum
- The EU Competition Commission intervened in the area of exclusive sports rights contracts between leagues and TV stations, cancelling the exclusivity agreement between the French Soccer League and Canal+, and opening a door for its main competitor TPS (satellite operator). It is noteworthy that the new contract signed by TPS, plus the new contract signed by Canal+ are even added together less valuable than the previous exclusive contract signed with Canal.

2.4. Contrast between “rich vs. poor” sports

- In Europe 4 specific sports and 2 specific events represent more than 90% of the money involved in sports rights.
- In Europe, there are 3 “rich” sports (where TV rights/image rights are high) Soccer (above all), Tennis, and Formula 1.
- There are also some important sports events which are much more popular than the other events of the same sport:
  - the Tour de France, and to a smaller extend the Giro in Italy and the Vuelta in Spain. This important cycling race involves much more money and venues than all the other cycling events.
  - Of course, the Olympic Games are also very important every 4 years, but swimming and athletics have otherwise very small TV audience and stadium venues

2.4. Contrast between “rich vs. poor” sports

- For instance, in the Nederlands, these 3 sports and 2 events represent 94%, and soccer reaches 83 %

TV rights in the Nederlands: NOS + RTL+ SBS +UPC+ Canal+

Sports	€ m	%
Soccer	81,7	83%
Cycling Tour de France	0,6	1%
Olympic	5	5%
Tennis	2	2%
Formula 1	3,5	4%
Skating	5	5%
Darts	1	1%
Total	98,8	100%

94%

- Another sport, horseracing, also involves a lot of money, but mostly thanks to betting.
- All other sports are living with little money, and split between
  - those where the best players are professional: Basketball, Rugby Union, Boxing, Skiing
  - those where they still remain amateurs: Judo, Handball, Volley ball, Ice Hockey and other ice sports. Of course in the second case, these sports have even less money

2.5. Clubs and players are becoming “brands”

- All the top brands in the world such as Coca Cola try and create a feeling of “togetherness” among their consumers or client base, through the sharing of common values, and of a direct feeling/emotional experience in relation to the brand.
- Consumers seem somehow saturated with advertising, and with direct communications (mail, e-mail), and brands are constantly looking for more qualitative ways of engaging their customers. Surveys show that a single consumer is overwhelmed by more than 300 advertising messages a day in London through radio, billboards, shopping, television, internet & phone ads, at work, and goods.
- Sport venues offer a unique emotional experience, due to the extreme built-in suspense of sport, and are becoming a unique way to share the same passion among a large number of people.
- The relation between sports fans and their favourite teams is very deep. In soccer, fans spend a lot of money with and for the club (season tickets, branded apparel, etc).
- No surprise that major clubs or national teams and even players are becoming “brands” in their own right.
- A big advantage for these specific brands is that they advertise on TV for free, through live matches and games.

2.5. Clubs and players are becoming "brands"

- For instance "Olympic Games" is the 3rd most recognised brand in the world.
- As a result, derivative products have a great future. Stadia, as "brand headquarters", are more and more important and could develop greatly in terms of corporate hospitality, Large Electronic Displays, heritage centres and branding malls.
- The link between club/brand and consumers is being materialised by
  - Smart cards (allowing the club to know its clients, and profile) which may also be access card to stadium,
  - Subscription to information services via mobile phones, or on the Internet: Vodafone in the UK has made this a speciality
- A new trend is to create TV stations dedicated to the most popular soccer clubs. But less than 10 are in operations; all seem to be losing money for the moment.
  - BSkyB broadcast Manchester United TV (managed by Granada), Arsenal TV, Chelsea TV in UK, RealMadrid TV and Barça TV in Spain, Sky in Italy broadcast Milan AC , Inter Milano, AS Roma TV in Italy (hosted by Rai services). In France Marseille TV is a project, as well as PSG TV.

2.6. Stadia are a “crossroads” industry

- Stadia is at the crossroad of 4 industries sectors: sports equipment, broadcast & media, real estate/themed park & building industry, advertising
- For the themed park industry, stadia are considered as the fastest growing segment of the market. LED and presentation systems is the fastest growing segment in media sector.

2.6. Stadia are a “crossroads” industry

- Many specialities and specialists are involved in building or supplying stadia, where in-house entertainment systems represent a small but significant part.
- Market is global as these specialised companies are present world-wide

Stadium Specialized Services
- Architectural Design
- Business Consultancy
- Catering
- Cleaning and Maintenance
- Communication, Sound, Video and P/A Systems
- Broadcasting Equipment
- Signage, Scoreboards and Screens
- Construction Consultancy
- Construction Materials
- Engineering and Construction
- Disability Access
- Aquatics and Water Parks
- Flooring
- Golf Course Architects
- Lighting
- Seating
- Security
- Staging
- Surfaces: Turf and Synthetic
- Ticketing

Companies	Country	Products
Barco	Belgium	LED
Creative Technology/Screenco	UK	LED, integration
Mitsubishi	Japan	LED
ANC Sports	USA	Signage, scorer
Ondavision	Italy	Rotational signage
Spectra	UK	Text Display& LED
Sports&Time	South Afr.	Clock&time systems
Lighthouse	USA/UK	LED
Dixon Sports	USA	In-house entertain.systems
EVS	Belgium	In-house entertain.servers
Grass Valley (Thomson)	France/USA	In-house entertain.servers
Leitch	Canada	In-house entertain.server

2.7. New channels of distribution for sports

- During the last soccer World Cup, most of the TV viewers were not at home during the matches of the England team in the UK , but at pubs, sports bars, in front of Large Electronic Displays at public locations (big stations, big places), in cinemas and theatres, where extra video projectors where used.

Viewer watching World Cup	# million viewers	%
TV at home	9	36%
Outside home *	16	64%

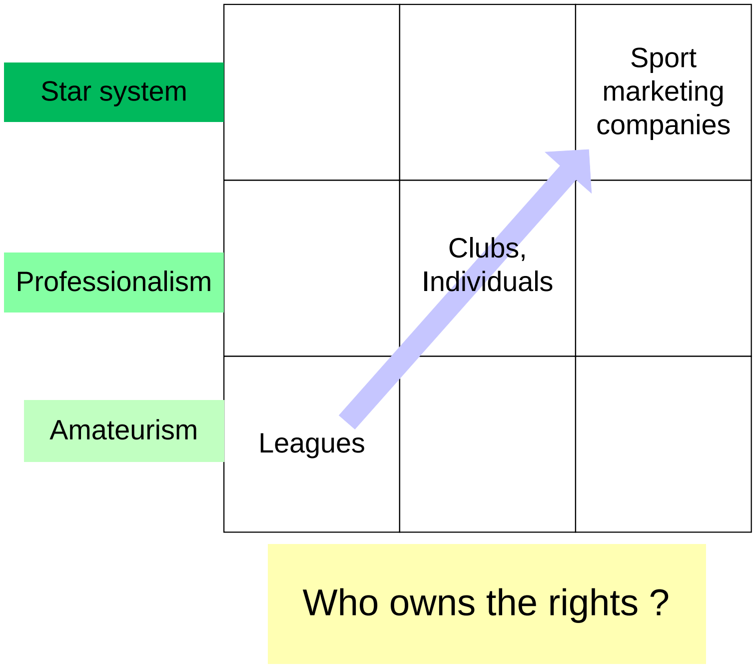
* Pubs & bars, big screens at public locations, cinema theaters

Source BBC R&D

- Since then, the rights attached to these new channels of distribution are a big issue, and contracts tend to embody specific conditions for that. In the meanwhile TV-stations try and invoice bars for displaying matches. There was a big conflict between TF1 and a lot of bars in France last year.
- Cinema theatres have always been reluctant to use their venues for sports events (fears of vandalism, etc.) but the emergence of digital cinema may change that vision: UCI in Germany has a lot of experience in that, as well as digital cinema pioneers such as Odeon theatres in the UK.

2.8. Evolution in rights ownership

- In the relatively poor sports, the National Body or League ruling competitions owns the rights (TV broadcast rights as well as clubs/players image rights). In “rich sports”, clubs own the rights, and for the most important European Soccer Clubs (Manchester United), or Tennis tournaments such as Wimbledon, rights are often sold by a Sports Marketing company such as IMG.



2.9. Rights ownership drives re-utilisation

- Sports is driven by the question of rights ownership.
- There are several rights categories, notably TV rights and image rights (related to clubs and to players/stars).
- An important detail for MAM is that TV-channels having acquired a live event TV rights may show highlights later and free of charge. This condition is present in most of contracts between rights owners and TV-channels.
- Therefore and mostly TV channels only archive sports that they have broadcast live.
- Some exceptions come from those who prefer to keep the digital version (as opposed to tape to avoid a second digitization or transcoding). When they want to put it on-air again, they must however acquire or re-acquire the rights attached to this specific item.
- Rights owners are for those reasons prospective future users for MAM: TV-channels, leagues (“poor” sports), clubs (“rich” sports), marketing,

2.10. A Club's budget is mainly used for purchasing players

- In Europe, when a club has got money, it still uses it mainly for purchasing players (soccer) or drivers (Formula1). They therefore do not invest much in systems, still less to develop ambitious distribution models.
- To-day, there is a contrast between the issues and money involved in sports/video systems and their possible benefits and the managers' real understanding of it: distribution repository, video coaching:
  - in Europe at least, coaches are still intuitive people, leaders of men rather than analytic and intellectual people.
- Budget for video is growing, but still small
  - but the corporate IT and video staff is still under 5 people at maximum for big soccer clubs of budget > €100m/year (PSG=3 IT, 1 photographer, 1 videojournalist freelancer).
  - Florida Marlins annual budget for video equipment is less than 12000 $
- This situation is changing due to several factors: more and more business leadership experience among club presidents, clubs becoming public companies, acceleration of competition.

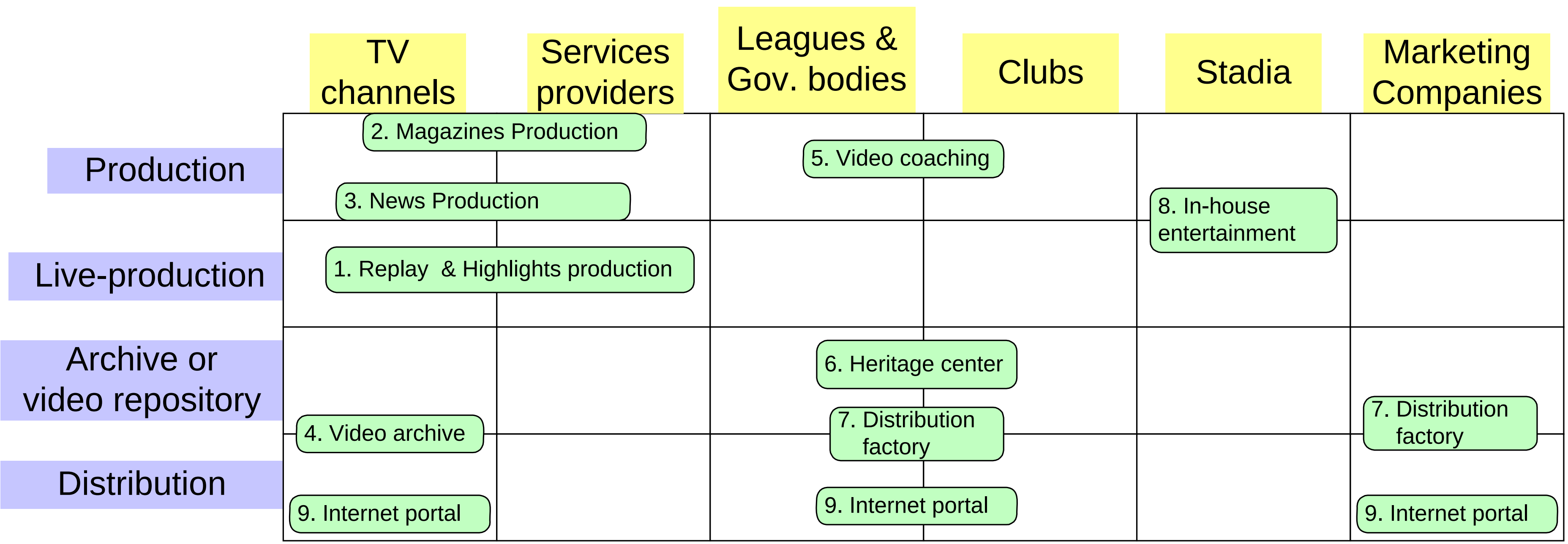
2.11. Subcontracting to service providers is the rule for live sport as well as for magazines

- Most frequently, TV channels subcontract to service-providers both live and magazine production
- The below Avid Unity statistics for Europe show that TV channels own only 38% of shared media systems. Even more because TV channels such as RAI, France3 and the BBC have their own service-provider division.
  - This statistic is representative of all production including drama, gameshows, news, trailers, and sports. In sports, this trend of subcontracting is even more valid.
- In some countries, TV channels are work with preferred service providers
  - In France, the 3 big sports TV groups: Canal+, TF1, and France TV (to a lesser extent) always work with the same suppliers, respectively : Euromedia-VCF, Visual (France Telecom), Euromedia-SFP

	TV Channels	Service providers on behalf of TV	Total
Avid Unity systems (shared media)	61	99	160
% of total	38%	62%	100%

3. Analysis of sports MAM applications

- We identify 9 categories of applications in production, content repository and distribution (in Annex the 185 cases database)



3. Analysis of sports MAM applications

- We identify 185 sports MAM applications: 48% of video coaching (mainly clubs), 26% of Replay & highlights production (TV channels and OB-van services providers), 15 of % In-house stadium entertainment. These are the most important categories.

Categories	1. Replay & Highlights production	2. Magazine production	3. News Production	4. Video Archive	5. Video Coaching	6. Heritage Center	7. Distribution Factory	8. In-house Entertainment	9. Internet Portal	Total	%
TV Channels	30	5	9	2					2	48	26%
Services Providers	14									14	8%
Leagues/Governing bodies	4				9	1			1	15	8%
Clubs					79		1	1		81	44%
Stadia								26		26	14%
Marketing Companies							1			1	1%
Total	48	5	9	2	88	1	2	27	3	185	100%
%	26%	3%	5%	1%	48%	1%	1%	15%	2%	100%	

- North-America reaches 55 % of cases, Europe 35%, Asia-Pacific 9%. Video coaching and In-house entertainment are mostly US applications, while Highlights production and storage seems more important in Europe.

Categories	1. Replay & Highlights production	2. Magazine production	3. News Production	4. Video Archive	5. Video Coaching	6. Heritage Center	7. Distribution Factory	8. In-house Entertainment	9. Internet Portal	Total	%
Asia-Pacific	9	1			7				1	18	9%
North America	7	4	4		58			26	2	101	55%
Europe	32		5	2	23	1	2	1		66	36%
Total	48	5	9	2	88	1	2	27	3	185	100%

3.1. Replay & highlights production

- Live production currently means to produce highlights to play them as replays just after a scoring or other significant action, but also during breaks, at half time or at the end.
  - In some sports such as athletics, several actions occur simultaneously on the stadium. It is therefore useful to record a jump and to show it after the end of a race.
- Mark in, mark out is completed by instant replay operators, who add some metadata, in order to be able to replay a goal or a winning point or best actions, not only during live but later during breaks, at the end of a match, or more rarely later as magazines or news items or archive items.
- Speed is crucial, and the amount of time to script or index is very limited: therefore metadata is limited to 3 or 4 items, rolling menu and keyboard assisted, using a touch screen or control panel.
- Metadata capture is very limited, 3 to 4 items in soccer for instance: name of player1, name of player2, category of action (free kick, penalty, red card, goal), quality of action (from + to +++).
  - Of course a highlight is defined by time-code of beginning, time-code of end, automatically captured by mark-in mark-out actions of the operator.

3.1. Replay & highlights production

- User-configured combo-box on several fields (ORAD, QDI, PINNACLE), Special clicks to mark start and end of action (ORAD, QDI), even sport specific location of action (Pinnacle offers a special window showing sport field giving opportunity for user to point with mouse the specific spot of action).
- When the program (live and shortly after the game) is finished, the produced highlights video is dubbed to tape for future archiving, and the server is purged. The are very few digital transfers to other servers for future magazine production or archives. Live sport production is still a completely separate workflow from magazines production, news production and archiving.
- However there are more and more metadata to be ingested during live events, to allow efficient retrieval of an ever-increasing number of highlights (because of increase in number of cameras). EVS for instance follows this trend as all replay machines are connected. A server is more and more often used to store highlights, as well as archive material related to the game. Need for smart indexing is more and more important during live games.
- *A perfect case study is the soccer “Champions League” coverage of most of the premium channels in Europe, including Canal+: up to 24 cameras*

3.2. Magazine production

- For the moment, very few sports magazines are made with shared media and server based installations. Most of them are made with a single NLE machine, and therefore a real MAM application is not necessary.
- The classical workflow can be seen at VRT for instance: during the night, a journalist looks at the Tennis Australian Open live and notes down time codes corresponding to the most important actions, as live is recording on a VTR.
- In the morning, before going to bed, he gives its notes to a colleague of his, who is working with a craft editor to produce 90 minutes of magazine and highlights reporting on the previous night's matches.
- *A case study is the completion of 10-minute highlights and magazine packages for the Tour de France since 1999, with the Orad Elefant control panel on an Orad Forum server. Indexing is made by QDI with cycling specific menus.*
  - *Because Tour de France last 3 weeks, one stores up to 3 weeks of highlights to complete themed packages.*

3.3. Sport News Production

- This workflow is very close to the standard news one. However there is a requirement to ingest far longer live feeds in order to produce 30 second highlights of a specific game.
- There are 3 main destinations in sports items news production:
  - Normal news bulletin of a general TV channel
  - News section of a sport channel
  - News wheel inside a 24 hours sport channel
- Most frequently the channel receives clean feeds of highlights of the game and the journalist adds an original voice over.
- Highlight videos are originated from live coverage departments or wires agencies.
- This workflow is typical of agency-based production for news, and frequently used for international politics coverage.
- A typical example is the German “Plazamedia” 24 hours Sport Channel (Saban group) Sony Newsbase, or the new ambitious ESPN project with Quantel, Omnibus and BBC Colledia ingest.

3.4. Video archive

- Most television stations have archives for news and for programs. In some cases the Sport departments of TV channels have their own archive, such as France 2.
- In many cases, it is still videotapes on shelves, but with a application which manages content information with also physical storage using barcode references.
- VRT, France2 have both had such an application for some time.
- In some cases (France2, ABC, Globo in Brazil) the sports department indexes “live” even if the essence is not digitally stored.
  - *France2* for instance has built a home grown application (“SIMCA”) integrating “Fullcroom” seach engine, some rolling menus and smart key scripting, with a sport specific vocabulary for quicker indexing. In this case, an archivist is present either in the stadium or the studio and is always scripting live for archival purposes. “Simca” allows live time capture and scripting of clips.

3.5. Video coaching

- A lot of clubs, national associations and governing bodies look for a competitive advantage using specialized coaching and training software.
- The principle is first to ingest and index game videos.
- These tools always use low-resolution proxy editing.
- The main features are
  - Match review for player education
  - Graphical selection of action
  - Simulation of game plans
  - Editing themed videos, or highliting the play of one player.
- Each sport-specific application allows the building of a statistical database providing a legacy for 1 to 3 years, along with analysis tools.
- Some software such as Pinnacle Teamsports or Dixons allows video mail between coach and players, with titling annotation and graphical comments.
- The leading US team sports, such as football, baseball, basketball and ice-hockey, seem much more advanced on this matter, using more statistics, than European sports. Rugby is also quickly developing, especially with some software coming from NewZealand and Australia, such as “Sportscode” of Sportstec.

3.5. Video coaching

- There are also a lot of amateur coaching tools, and even the “professional elite” software packages also come in an amateur “lite” versions. Teamsports has a version for amateur players starting at only $1000.

- These software tools are sport specific: graphic tools, statistics, GUI for video analysis. Some interface with sport-specific bio-metrics software. Ingest is rather sport-customized than sport-specific, and the only common part among sports is the editing software (Pinnacle Vortex, for instance).

3.6. Heritage Center

- There is only one case of a true “heritage center” in Kane’s database. The French Tennis Association (FFT) stores all highlights of the French Open Tournament, as well as the Paris Bercy Tournament. FFT owns the rights for these tournaments. It is a real MAM with ingest, content management and search engine from QDI. Any player or team coach may research highlights for education or training purposes, and can have access to high-resolution MPEG2 pictures after browsing in MPEG4. This video repository is also used to compile and sell highlights packages on VHS of each year’s tournament, and to produce a daily magazine during the tournament.
- Ingest makes use of the QDI thesaurus. 10 items of information are entered live by volunteer tennis coaches on each of the 8 courts (2 per court). Scoring is automatically added to the metadata thanks to a real-time interface with the IDS scoring system used at Roland Garros.
- This video repository application may have an important future implication for major clubs, sport governing bodies, covering at the same time cultural, technical and commercial purposes.

3.7. Distribution factory

- There is only one case (IMG/TWIi) in this category, with one similar project at an individual football team.
- This is also a video repository, but with other media (music, news item, stills, articles, etc.). The purpose of this repository is to distribute and to sell content associated with multiple media: themed TV channels, wireless phones, Internet, synchronized TV and web broadcast. It requires rights ownership or right management on behalf of the owner. No surprise then that a major sports rights marketing company such as IMG has developed a complete digital facility called “Interactive Content Factory”. This has an editing tool (EDL editing and high res. conformation) to re-purpose 9000 hours of stored video of major clubs, major players, major tournaments (such as Manchester United, Wimbledon, video of top 10 tennis players, etc.).
- A remarkable “workflow management tool” allows the very rapid creation of any new distribution channel for video content.

3.7. Distribution factory

- A comparable project exists at the soccer club PSG (Paris Saint Germain), with the projected PSG TV, 2 big-screen in house entertainment outlets, corporate hospitality, video at bars, and a lot of content to distribute to PSG fans through portable telephones and internet (30,000 smart PSG card holders).
- PSG thinks that derivative products, including digital branded content distribution, is the only way to increase its revenue in the future.
- Sport fans are said to spend high budget on derivative products.
- Besides fans are ready to spend money to receive scores of the other matches during PSG matches when they are present at the stadium, as well as news and video highlights on the Internet and on mobile phones during the week.

Category/revenue	% of total	Evolution
TV Rights	50%	Stability or decrease
Tickets	30%	Stability or decrease
Sponsorship	10%	Stability or decrease
Derivate Products	10%	Opportunity of increase

3.8. In-house entertainment

- A lot of stadia want to improve the “spectator experience” at their venues.
- They use big screens display action-replays as on TV. They develop in-house entertainment packages to help justify the high level of ticket prices. Large electronic scoreboards/displays are one of the fastest growing features of the industry and require production, storage, automation, sport specific graphics and CGI just like TV, but with higher definition requirements.
- This server-based production seems much more developed in the USA for major US professional sports than in Europe, at least for now. In the USA, a lot of clubs own their stadia as opposed to continental Europe where they are owned by local authorities for the most part. The need and appetite for statistics seems also much greater in the USA, and for US sports in general (especially for baseball).
- Although demand is less, the need for live statistics for European sports such as soccer and Rugby is becoming more and more important.

3.9. Internet portal

- Some TV sports channels develop a web news portal, to deliver more in depth content than they can on TV, and thus to synchronize TV and web content. They promote the web (a free medium without too much regulation) on TV. They promote TV on the web.
- Some leagues and clubs find a unique way to distribute video and content to their affiliates and fans. Most of the time the Internet is used more as a communication channel than as a revenue stream.
- Fox Sports, Eurosport for TV and NBA for leagues are perfect examples of the most visited sports web sites.

3.10. Sports specificity

- For live sport & highlights, tools are not sports-specific but sport customised:
  - In some cases ingest is made through PCs with customised menu or smartkeys
  - Smartkeys represent sport specific items : For instance, F3= goal, F4 opens a menu with the names of players, etc.
  - In some other applications there are control devices or touch screens with predefined zones.
  - In this area, graphics/statistical tools are more sport-specific than pure highlights applications: for soccer, showing off-side line visualisation, or tackling statistics, field-position, or percentage of ball possession.
- Coaching is even more sport-specific, especially when it comes to statistics, presentation or GUI, and simulation tools. Ingest is comparable to highlights production and therefore more customizable than specific. Editing and duplication are standard features across all sports.
- News production and repository/distribution is not sport specific, however the ingest must be customized by sport for the last category of applications.

Suppliers	US Football	Baseball	Basketball	Ice hockey	Soccer	Rugby Union	Austr.Rugby	Horse race	Table tennis
Orad	X								
Pinnacle Teamsport	X	X	X	X	In progress				
Dixon Sports	X	X	X					X	
Sportstec			X	X	X	X	X		
Applied Innovative Sol.			X			X			X

3.10. Sports specificity

- Coaching is even more sport specific, because the statistics, the presentation or GUI, but above all the simulations are sport specific. Inside coaching tools, ingest is comparable to the one for highlights production and therefore is more customizable than specific. Editing and duplication are standard features accross all sports.
  - Only 9 sports have coaching tools for the moment. We could not find anything for tennis, cycling, or fighting sports.

Suppliers	US Football	Baseball	Basketball	Ice hockey	Soccer	Rugby Union	Austr.Rugby	Horse race	Table tennis
Orad	X								
Pinnacle Teamsport	X	X	X	X	In progress				
Dixon Sports	X	X	X					X	
Sportstec			X	X	X	X	X		
Applied Innovative Sol.			X			X			X

3.11. Interface with scoring and time systems

- One would think that the score in soccer, or the time gap in cycling, would be perfect metadata to qualify a highlight of the game or the race.
- One would expect it to be fed automatically into the database by scoring, clock & time systems. In fact, we only found it once, for QDI Roland Garros, where ingest captures the exact score at any mark-in or mark-out point. The score is an important indexation in a tennis match. It also shows that these systems are in their infancy.
- On the contrary, score/time systems are usually interfaced with the on-air graphic tools for TV or stadium broadcasts, even if there is also a lot of double input of scores.

3.12. Common functions across different applications

- The 9 applications may seem very different according to their user destinations, but they actuallyuse a great number of the same basic functions.
- For all applications the necessary scripting (with a small amount of metadata) and highlight selection has to be completed live by a person knowing the specific sports and event. This should lead to “input once” during live events for all future needs: magazine, news, coaching, archive, distribution. But it is far from being the current situation.

Functions	Live production			Production						Distribution				
Applications	Ingest & Scripting *	Instant Replay &Slomo	Graphics &statistics	Manual indexing before archiving	Automatic Indexing (scene change)	Search Engine Thesaurus	High Res. editing	Low res Editing & Browse	Video mail	Dupli. tapes or DVD	In-house entertain ment	TV	Mobile	Web
1. Replay & Highlights production	X	X	X			Simple	X			X		X		
2. Magazine production	X		X		X	X	X			X				
3. News Production	X						X	X		X				
4. Video Archive	X			X	X	X	X	X		X		X		X
5. Video Coaching	X	X	X				X	X	X					
6. Heritage Center	X			X	X	X	X	X		X				X
7. Distribution Factory	X			X	X	X	X	X	X	X		X	X	X
8. In-house Entertainment	X	X	X				X	X	X	X	X	X		X
9. Internet Portal	X				X	X		X						X

* sport customised metadata & control pannels

3.13. Digital islands create isolated workflows

- Most people belong to different entities and “island” departments in TV-channels.
- At the end of live sports production, highlights are produced and put on tape, which are offered for further use: news, magazines, archiving
- All servers are purged, everything goes back to tape, nobody takes the necessary additional 10 minutes to index it properly in order to simplify future work of other departments or providing the teams coaches with highlights as an additional service.
- The magazine produced later in the week will complete again the cycle of ingest, scripting, mark in, mark out, ...
- As a matter of fact, only 6 projects out of 185 we have surveyed cover several applications, i.e. only 3 % of total. Those 6 realise live & highlights production, and magazine production with the same ingest, or live and archive all together.

4. Segmentation and market analysis

- We can identify 4 market segments, regrouping our 9 applications:
  - Live/highlights, magazines and TV sports archives (TV) and in-house entertainment systems (stadia): server suppliers such as EVS, Leitch, Grass Valley, but also Dixon for stadia, M2Plus
  - Sports news where suppliers are the same as for news: Sony, Avid, Leitch, Grass Valley
  - Coaching, where Pinnacle Teamsports, Dixon Sports, Sportstec are leaders
  - Repository/heritage center/distribution, where QDI, Blue Order, TWII operate

Suppliers	1. Replay & Highlights production	2. Magazine production	3. News Production	4. Video Archive	5. Video Coaching	6. Heritage Center	7. Distribution Factory	8. In-house Entertainment	9. Internet Portal
EVS	X	X						X (beginning)	
Leitch	X		X					X	
GrassValley (Thomson)	X							X	
Orad	X								
Avid	X (few)	X	X		X				
Sony			X						
Pinnacle					X				
Dixon Sports					X(4 US sports)			X	
Sportstec					X Rugby, …				
Blue Order	X			X					
Convera									X
QDI		X			X	X			
TWII							X		
Doremi	X								
Applied Innovative Sol.					X Rugby, …				
M2plus									

4. Segmentation and market analysis

- Stadium in-house entertainment applications belong to the same segment as live & highlights production because the first objective is to be able to replay actions on a big screen during a live event; but parts of in-house entertainment such as corporate hospitality and big screen programmes may be stored in the “club video repository and heritage center” (i.e. glorious highlights of the past, ...).
- Live & highlight production, magazine production and sports video archive are grouped in the same segment, because in the future Kane thinks that the live ingest scripting used for live transmission programmes will later be used to produce magazines and as a first step in indexation for archiving highlights.
- We imagine that metadata ingested live will be saved at the same time as video for producing a magazine more efficiently, or keeping the right highlights in the sports archive.

4.1. Live and highlights, magazines and TV archive

- In this segment, live programs, using a lot of cameras, will need in the future to store more numerous highlights for replay during breaks as to-day. One will need a shared highlights video repository. Multi-day events will also benefit from this mini-archive (to produce themed packages), also useful for magazines and ultimately to fill the real sport archive.

Segment	Segment Status	EMEA Market Segment Evaluation	Market size
Live & highlights, magazines prod. and in house entertainment, TV sports archive	Mature market for instant replay with independent servers. This segment evolves to shared media with more metadata ingest. EVS, the world leader is presenting something for NAB 2004, but still need a more sophisticated product for longer term archiving.	EVS has sold 1600 LSM servers in the world.according to another Kane's study regarding servers, 73 premium TV are not equipped in Europe, out of them 20 may implement it in the future 3 years for events lasting more than one day (Tour de France = 3 weeks)	Project budget \$1m MAM budget \$0,3m 65 projects 2004-2006 \$6m /year

Segment	Project	# 04-06	\$m	total	2004	2005	2006	2007	2008	2009
Live & highlights/mag/TV archive		65	0,3	19,5	6,5	6,5	6,5	6,5	6,5	6,5
								same as 2004-2006		

4.2. Sports news

Segment	Segment Status	EMEA Market Segment Evaluation	Market size
Sports News	This market is the same as for general news	Penetration of server based newsrooms higher than for general news, because sports channels are richer, but they are also less numerous: cost of rights create an entry barrier for this segment.	Project budget $1m MAM budget $0,3m 5 TV per year 2004-2006 $1,5 m/year

Segment	Project	# 04-06	$m	total	2004	2005	2006	2007	2008	2009
Sports news		15	0,3	4,5	1,5	1,5	1,5	1,5	1,5	1,5
								same as 2004-2006		

4.3. Video coaching

- Note that while in general the market surveyed is Europe, for tennis it is world-wide.

Segment	Segment Status	EMEA Market Segment Evaluation	Market size
Video coaching	This is a mature market for US sports: football, baseball, basket ball. It is only emerging for other sports including soccer clubs and tennis players	Video coaching is something like $100 m market with Pinnacle Teamsports at $40m.	Project budget $150k MAM budget $100k Top 400 clubs in Europe Middle east in 5 years Top 200 tennismen in the world, top 100 tennis women. 100 other sports national governing bodies or clubs. Total market $140m: 2005-2009 Emerging market = Year1: 5% ($7m

Segment	Project	#	$m	total	2004	2005	2006	2007	2008	2009
					0%	5%	15%	20%	25%	35%
Video coaching		900	0,1	90	0	4,5	13,5	18	22,5	31,5

4.4. Distribution repository

Segment	Segment Status	EMEA Market Segment Evaluation	Market size
Distribution repository & heritage centers	This is a complete emerging market, with only 3 cases (NBC Olympics, French Tennis League, IMG) and a project (PSG)	But all "brands" club will need it: about 30 soccer clubs in Europe. Each installation will be between 1 million euros and 10 million (average 3 m€)	Project budget $3m MAM budget $2,4m Top 30 soccer clubs in Europe Middle East in 5 years 10 governing bodies such as :ATP , AWTP, ASO (Tour de France), FOCA Project budget $1m MAM budget $0,8m 30 other sports governing bodies or clubs Emerging market =

Segment	Project	#	$m	total	2004	2005	2006	2007	2008	2009
					0%	5%	15%	20%	25%	35%
Distribution repository & heritage centers	big projects	40	2,4	96	0	4,8	14,4	19,2	24	33,6
	medium projects	30	0,8	24	0	1,2	3,6	4,8	6	8,4
	Total		$m	120	0	6	18	24	30	42

4.5. Go-to market strategy

- In total, the Sports MAM market can be evaluated in Europe (+ worldwide tennis) at $8m for 2004, rising to $39.5m in 2006.

Segment	2004	2005	2006
Live & highlights/mag/TV archive	6,5	6,5	6,5
Sports news	1,5	1,5	1,5
Video coaching	0	4,5	13,5
Distribution repository	0	6	18
Total MAM/sports	8	18,5	39,5