CHAPTER - VI

RESOURCE BASE AND INDUSTRIALISATION: THE CASE OF RUBBER BASED INDUSTRIAL SECTOR IN KERALA

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Introduction

The theoretical perceptions and predilections on the efficacy of resource base as a necessary condition for sustained industrial development are part of serious academic debates on development planning across countries of different ideological moorings. Historically, the logical premises of the resource based industrialisation strategy appear to have revolved around the pivotal role of resource base in the growth of agribusiness and the subsequent industrial growth in the "Colonies of settlement" during the 18th and 19th centuries[1]. However, aberrations from the perceived organic relationship between resource base and industrial development have been exposed in the case of major export oriented plantation crops and other primary commodities produced in the erstwhile tropical colonies of Europe (Mc Fadyean, 1944; Bauer, 1948; Beckford, 1972; Dawood, 1980; George and Tharakan, 1986; Corea, 1992; Barlow, 1994; Findlay and Lundahl, 1994). The operational level constraints of the plantation agriculture evolved in the tropical colonies in exploiting the resource base have been mainly due to weaker linkage effects confined only to certain forward linkages. One of the critical factors determining the linkages is the distribution of value added among the different factors of production. Historically, not only the export oriented plantation sector was institutionalised to feed the markets of colonial powers but also a major portion of the surplus generated in the colonies was repatriated. Nevertheless, from a policy angle, the most discernible trend which persisted during the colonial and post-colonial phases has been the generation and appropriation of the value added outside the purview of the plantation economies of the third world.

The evolutionary growth of world natural rubber (NR) economy and the status of rubber products manufacturing industry in the major NR producing countries over

time illustrate the persistent dichotomy between resource base and industrial development[2]. Even in 1998, the relative share of all NR producing countries in the total world consumption was estimated to be only 37.48 per cent (IRSG, 1999). Table 6.1 illustrates production and consumption of NR in the major producing countries and regions.

Table 6.1: Production and consumption of NR in major producing countries and regions (1998)

Country/ region	Share in world NR production (%)	Domestic consumption as % of production
Thailand	33.12	8.42
Indonesia	26.13	5.75
Malaysia	13.30	37.72
India	8.88	98.17
Sub total	81.43	22.13
Other Asia	13.60	109.77
Asia total	95.03	37.23
Others	4.97	91.53
World total	100.00	37.48

Source: IRSG, 1999.

As is evident from Table 6.1, the NR producing countries have been basically decimated to the status of raw material bases of the rubber products industry concentrated in the developed countries for more than a century. The USA, EU and Japan have accounted for about 45 per cent of world NR consumption dominated by the automotive tyre and allied products sector with a relative share of more than 80 per cent in 1998 (IRSG, 1999). The regional and structural concentration of world rubber products industry is historically rooted and sustained by a host of factors relevant to global disparities in industrial development. An important manifestation of the regional and structural concentration of NR consumption and rubber products manufacturing has been concentration in world trade in rubber products. In the estimated total value of world exports of rubber products worth US$ 40.97 billion, the combined share of the USA, EU and Japan was 73.89 per cent in 1996. Table 6.2 shows the regional and structural composition of global trade in rubber products.

Table 6.2: Regional and structural composition of world exports of rubber products (1996)

Region	Relative share (%)	Rubber products	Relative share (%)
USA	9.81	Materials of rubber	16.63
EU	50.73	Rubber tyres, tubes etc.	60.04
Japan	13.35	Rubber articles - Nes*	23.33
Sub total	73.89		
Others	26.11		
Total	100.00	Total	100.00

Source: UN, 1997.
**Not elsewhere stated*

The regional concentration of global exports of rubber products is in conformity with the pattern of exports of all commodities as these three economic regions controlled more than 60 per cent of the total value of world exports in 1996. The structural concentration of world rubber products industry characterised by the dominance of automotive tyre and allied products sector in global production and trade assumes more importance than the regional concentration in the context of globalisation due to the growing oligopolistic nature of the industry[3]. An obvious outcome of the ongoing process of globalisation has been a steady increase in cross-border mergers and acquisitions nullifying the constraints of a mere national frame of economic policies (UNCTAD, 1998). It is in this conceptual backdrop that the structural characteristics of Kerala's rubber based industrial sector embedded in the larger context of Indian rubber products industry, are analysed so as to highlight policy perspectives on the industrial potential.

The Approach and Diagnosis

Despite its colonial heritage, the evolutionary growth of rubber plantation sector in Kerala has been unique compared to the other major NR producing countries due to region specific historical, political and economic factors (George et al, 1988; George, 1996; George and Thomas, 1997). In the process of growth, the state has not only sustained its near monopoly position in the production of NR in the country but

also the rubber plantation sector has attained a prominent position in Kerala economy over time (George, 1999). Even in 1997-98, the relative shares of the state in total area under rubber cultivation and production in the country were 85 and 93 per cent respectively (Rubber Board, 1999[a]). However, academic attention on its relatively weaker rubber products industrial sector with a share of 11.99 per cent in the country's total NR consumption has been scanty[4]. Very often, at the academic and policy levels, the explanation for the observed asymmetrical relationship between the raw material base and the industrial sector is subsumed under the general diagnosis of the slow pace of industrial investment in Kerala. Although the root causes and remedial measures of the slow pace of industrial development in Kerala have been vigorously debated among the academicians without a consensus, the polemics have not enabled to formulate appropriate policy interventions. The major explanatory variables attributed to the observed trends are : historical and structural factors, higher wages, inadequate infrastructural facilities and institutional support and deficiencies of the local entrepreneurship (Govt. of Kerala, 1984; Subramanian and Pillai, 1985; Issac and Tharakan, 1986; Thampi, 1990; Mahadevan, 1991; Mathew, 1999). However, the major issues pertaining to the rubber based industrial sector in Kerala merit further explanation due to two reasons: (1) in spite of its initial export orientation the development and growth of Kerala's NR production sector since the late 1930's have been mainly guided by the growth of a large and wide rubber products manufacturing industry in India vis-à-vis other major NR producing countries and (2) limited linkages of rubber plantations as a resource base to exploit the locational advantage. Therefore, with a view to identify the underlying factors and to focus on the relevant policy inputs, the paper is decomposed into four sections: (1) status of the industry, (2) structural characteristics, (3) hypothesis and explanations and (4) perspectives on the industrial potential.

Status of the Industry

From the analytical angle, the status of rubber products industrial sector in Kerala has two dimensions, viz; its position in the larger context of Indian rubber products manufacturing industry and in the industrial map of the state. Since the late 1930s, the state's NR production and rubber products sectors have been evolved as an integral part of the Indian rubber economy compared to the export orientation of other major NR producing countries such as Thailand, Indonesia and Malaysia on account of country specific historical, economic and structural factors (George et al, 1988;

Mohanakumar and George 1999). The three factors catalytic to the steady growth of rubber products manufacturing industry in India during the evolutionary phase had been: (1) the implementation of International Rubber Regulation Agreement (IRRA) in 1934 and the resultant availability of NR at lower price in India, (2) the entry of foreign companies such as Bata Shoe Company (1933), Dunlop (1936) and Firestone Tyre and Rubber Company (1940) to capitalise the advantages arising from cheaper raw material and labour and a growing domestic market and (3) colonial patronage to the industry in the backdrop of the increased industrial requirements during the inter-war years and the second world war period. The pace of the growth of NR in India had been remarkable during the inter-war years and it grew at an annual rate of 47.45 per cent compared to a negative growth rate of 7.23 per cent in the case of Malaysia during the period 1930-41 (McFadyean, 1944). Subsequently, in 1947, the domestic consumption of NR outstripped its production in the country [5].

An important dimension of the early phase had been a phenomenal growth of small scale units under Indian ownership located mostly in and around Calcutta and Bombay (Govt. of India, 1947). The focus of production of these units had been on general and mechanical rubber products to cater to the requirements of defence, railways and the general industrial sector in the backdrop of the second world war. The inherent economic advantages emanating from a growing and protected captive domestic market for general, mechanical and industrial rubber products in the background of IRRA and the world war, laid down the guidelines for the future direction of growth of the industry. The two obvious structural factors embedded in the growth process were the sectoral and locational concentration of the industry. The sectoral characteristic, which persisted and continued to dominate the industry, has been the concentration in the production of dry rubber products compared to the locationally advantageous latex-based products with higher NR content[6]. This unique pattern of the development has been fostered by the supplementary status of the industry, mainly catering to the requirements of the larger industrial base in the country over time. A conducive industrial environment for the observed pattern of development has been sustained by a highly protected and import substituting policy regime till the early 1990s. The locational concentration of the industry in the regions of general industrial growth appears to be an outcome of the colonial legacy leading to the concentration of industrial production in Calcutta, Bombay and Madras and public investment policy pursued in the post-independent phase (George and Joseph, 1992). The consequent effect on the status of rubber products industry in Kerala in terms of its share in total rubber consumption and major industrial characteristics are illustrated in Table 6.3 and 6.4.

Table 6.3: Relative shares of major states in rubber consumption (1997-98)

State	Share in NR Consumption (%)	Share in total rubber consumption (%)
Punjab	13.68	13.10
Kerala	11.99	12.78
Maharashtra	9.59	10.96
Uttar Pradesh	11.06	10.81
Tamilnadu	6.49	7.02
West Bengal	6.81	6.82
Haryana	6.01	5.68
Sub Total	**65.63**	**67.17**
Others	34.37	32.83
Total	**100.00**	**100.00**

** Note: Total rubber consumption includes NR, synthetic rubber and reclaimed rubber.*
Source: Rubber Board, 1999.

Table 6.3 indicates that though Kerala occupies the second position in NR and total rubber consumption in the country, the six other industrially advanced regions in the country account for 53.64 per cent in NR consumption and 54.39 per cent in total rubber consumption. As the relative position of Kerala in rubber consumption is not a foolproof indicator of the status of the state's rubber products sector in the country, its position in terms of major industrial characteristics at the three digit level classification is given in Table 6.4.

Table 6.4: Kerala's share in Indian rubber products industry (Factory sector, 1997-98) Share in

Industry group	Fixed capital (%)	Value of output (%)	Value added (%)	Employment (%)
Tyre & tube	4.33	8.03	8.55	6.36
Footwear	11.13	9.84	11.20	13.07
Other rubber products	12.88	16.45	7.03	18.62
Total	**6.98**	**10.32**	**8.32**	**12.72**

Source: CSO, 1997-98

To a large extent, the status of rubber products sector in Kerala in India's rubber products industry as given in Table 6.4 indicates the conjectural validity of the state's relatively important position in NR and total rubber consumption in the country. The combined share of the other six states in fixed capital employed (54.92%), total value of output (52.19%), net value added (50.00%) and employment (62.21%) underscores this observation. However, a remarkable feature of Kerala's position in the three broad industry groups is a higher share in the unclassified group of 'Other rubber products'. In this context, it is also important to note that Kerala had the largest share (18.25%) in the total number of licensed rubber products manufacturers (5595) in the country in 1997-98 (Rubber Board, 1999a).

Apart from its relatively insignificant position in the Indian rubber products manufacturing industry, the position of Kerala's rubber based industrial sector in the industrial map of Kerala is also weaker compared to the raw material base. The shares of rubber based industries in the fixed capital employed (3.65%), value of output (7.28%), net value added (7.12%) and employment (5.16%) of the state's industrial sector show the status of this industrial sub-sector. The state's industrial structure has been dominated by basic chemicals, petroleum products and food products in terms of the shares in fixed capital employed and value of output. The apparent contradictions arising from the observations based on Table 6.3 and Table 6.4 in conjunction with the state's share in the total number of licensed manufacturers underline the relevance of a closer scrutiny of the major structural characteristics of the industry at the state and national levels.

Structure of the industry

The analysis of the major industrial characteristics of the sector will be useful to assess the structure of the industry evolved over time in Kerala vis-à-vis India and its relationship with the raw material base in the state. Table 6.5 shows the composition of rubber products industry in Kerala at the three digit level classification in relation to the all India position.

Table 6.5: Composition of rubber products industry in Kerala and all India (Factory Sector, 1997-98)

Industry group	Share in fixed capital (%)		Share in value of output (%)		Share in net value added (%)		Share in employment (%)	
	Kerala	India	Kerala	India	Kerala	India	Kerala	India
Tyre & tube	42.08	67.87	51.30	65.89	73.45	71.49	21.29	42.63
Footwear	8.58	5.39	8.49	8.90	6.62	4.92	12.29	11.97
Other rubber products	49.34	26.74	40.21	25.21	19.93	23.59	66.42	45.40
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: CSO, 1997-98

Table 6.5 is illustrative of the sharp differences in the structural features between the rubber based industrial sector in Kerala and the all India position. The fixed capital employed in Kerala's rubber based industrial sector is dominated by the unclassified group of 'other rubber products' (49.34%) compared to the unruffled position of the tyre and tube sector (67.87%) in the country. However, in both cases, the tyre and tube sector dominates with regard to the relative shares in total value of output and net value added. The 'other rubber products' category has the largest share in the total employment in Kerala (66.42%) and India (45.40%). Nevertheless, the discernible feature of Kerala's rubber based industrial structure emerging from Table 6.5 is that in spite of the dominance of the 'other rubber products' in fixed capital employed and a comparatively higher share of this sub-sector in the total value of output (40.21%) vis-à-vis the country's share (25.21%), the relative positions in net value added (19.93%) are obviously imbalanced. Therefore, it is plausible to surmise that the labour intensive 'other rubber products' category in Kerala is dominated by industries with higher raw material content and consequently with lower share of net value added. This unique feature of the sub-sector in Kerala could be due to the concentration of NR processing industry in Kerala arising from the basic requirement of primary processing after harvest. Table 6.6 shows the concentration NR processing industry in Kerala.

Table 6.6: Relative share of Kerala in NR processing units in India (1998-99).

NR processing industry	Total No. of licensed units in India	No. of units in Kerala	Relative share (%)
Ammoniated latex	6	6	100.00
Creamed latex	23	21	91.30
Centrifuged latex	72	57	79.17
Block rubber	57	54	94.74
Pale latex crepe	4	4	100.00
Estate brown crepe	2	2	100.00
Crepe rubber*	106	100	94.34
Total	**270**	**244**	**90.37**

** Note: As on 31st October, 1999* *Source: Rubber Board b, 1999*

Nonetheless, the composition of the dominant 'other rubber products' category requires further explanation at the disaggregate level so as to capture the product profile and relative shares in rubber consumption in the state. Table 6.7 shows the product-wise distribution of 1021 rubber products manufacturing units in Kerala in 1997-98.

Table 6.7: Product-wise distribution of rubber products units in Kerala (1997-98)

Product	Relative share (%)
Footwear	28.50
Tread rubber	21.83
Rubber bands	11.08
Foam products	6.25
Latex thread	4.50
Moulded rubber products	3.67
Rubber mattings	3.33
Tyre, tube and flaps	3.25
Rubberised coir, jute and woollen products	3.17
Gloves	2.42
Others	12.00
Total	**100.00**

Source:Rubber Board c, 1999

Product-wise distribution of the total number of manufacturing units in Kerala shows that more than 60 per cent are dry rubber based compared to less than 28 per cent share of the NR rich latex based units. This pattern of distribution is in conformity with the dominance of dry rubber products at the national level and indicates the limitations to exploit the commercial potential of locationally advantageous latex products in Kerala. The four product groups, viz; footwear, tread rubber, rubber bands and foam products, account for more than 67 per cent of the total number of rubber products units in the state. Another important aspect relevant to the analysis of the structure of rubber products sector in Kerala is the product-wise consumption of NR and total rubber vis-à-vis the all India position. Table 6.8 shows the comparative product-wise rubber consumption in Kerala and India.

Table 6.8: Product-wise consumption of rubber (1997-98)

Product	Share in NR consumption (%)		Share in total rubber consumption* (%)	
	Kerala	India	Kerala	India
Auto tyres & tubes	51.21	45.34	51.51	44.13
Cycle tyres & tubes	0.23	13.59	0.32	14.63
Camel back	12.98	5.87	15.85	5.76
Footwear	13.16	10.46	14.38	12.28
Belts and hoses	0.04	6.60	0.04	6.19
Cables & wires	Nil	0.28	Nil	0.51
Battery boxes	0.50	0.31	0.89	1.90
Sub total - dry rubber products	78.12	82.45	82.99	85.40
Latex foam	2.11	5.19	1.41	3.70
Dipped goods	12.87	4.67	8.59	3.33
Sub total - latex products	14.98	9.86	10.00	7.03
Others	6.90	7.69	7.01	7.57
Total	100.00	100.00	100.00	100.00

* *Note: Includes NR, synthetic rubber and reclaimed rubber. Product-wise data on Kerala is unpublished.*

Source: Rubber Board, 1999.

Although the observed pattern of NR consumption and total rubber consumption in Kerala and India is dominated by dry rubber products, there are important differences in the composition of product-wise consumption. The most noticeable difference is the relative share of the auto tyre and tube sector in Kerala (51.51%) and India (44.13%) in spite of the fact that the state's position in tyre and tube sector in the country is insignificant (Table 6.4). The NR consumption in Kerala has been dominated by auto tyres and tubes (55.21%), footwear (13.16%), camel back (12.98%) and dipped goods (12.87%) with the notable exception of the second largest product group in the country, viz; cycle tyres and tubes. A relatively higher share of latex products in NR consumption in Kerala (14.98%) vis-à-vis India (9.86%) merits attention as there are inbuilt locational advantages in the manufacturing of latex products in Kerala. The prominent dipped goods sub-sector within the latex products group in Kerala consists of products such as condoms, gloves and rubber bands.

The observations emerging from the analyses of the status of Kerala's rubber based industrial sector in India in terms of the major industrial characteristics, product-wise consumption of NR and the product profile indicate that the state could not fully exploit its raw material base as a springboard for industrial development. The industrial structure has been dominated by the unclassified group of industries with the prominent presence of NR processing units. The two important characteristics of Kerala's rubber products sector are: (1) a relatively higher concentration of both NR and total rubber consumption by large units[7] and (2) agglomeration of small scale units manufacturing a variety of products with relatively higher NR content. Though a detailed analysis encompassing the basic indicators of productive efficiency, major components of the value of output and comparative cost of production are beyond the scope of this paper, it would be useful to offer an explanation on the observed characteristics for further detailed enquiry.

Hypothesis and Explanations

In an operational sense, resource based industrialisation across regions and products is primarily dependent on three factors : (1) linkage effects, (2) distribution of value added among different factors of production, and (3) conscious policy intervention based on long term planning. The experience of the three largest NR producing countries for more than a century suggests that the linkage effects of the NR production sector had been weaker to exploit the commercial potential of the raw material base and the forward linkages have been basically confined to the primary processing industry. Conversely, the potential forward linkages in terms of the industrial potential and the net value added have been concentrated in the developed countries in spite of conscious policy interventions in Malaysia and Thailand since 1980s to exploit the locational advantage. An important development in the 1990s with serious

implications on the rubber products sector in the NR producing countries has been the growing concentration of rubber products manufacturing by the multinational companies (MNCs), especially, in the dominant automotive tyre and tube sector with stronger linkage effects. It is in this conceptual background that the relationship between the raw material base and rubber products industry has to be conceived and relevant issues examined.

Historically, the NR production sector in Kerala had been initially developed as a raw material base for Britain and subsequently for the industrially advanced regions in the country due to specific factors as mentioned earlier. Though the achievements of the NR production sector in Kerala over time have been widely applauded, it did not give rise to any significant linkage effects in the state (George, 1999). The backward linkages of NR production sector in the state confining to the planting inputs, artificial fertilizers and fungicides have been weaker in terms of spread effects and generation of employment (George and Joseph, 1992). Similarly, the forward linkages in the form of concentration of NR processing industries and primary marketing of the raw material in the state did not result in the growth of ancillary industries with spread effects. The linkage effects in terms of the growth of ancillary industries associated with the development and growth of the dominant automotive tyre and tube manufacturing sector also have by-passed the state during the pre and post-independent phases as reported earlier (George and Joseph, 1992; Mohanakumar and George, 1999). The locational concentration of the industry in the traditional regions of industrial growth such as Maharashtra, West Bengal and Tamil Nadu and subsequently to Punjab, Uttar Pradesh and Haryana deserves attention. The growth of rubber products industry in the latter group in the post-independent phase has been spurred by a host of factors including public investment, growth of infrastructural facilities and general industrial growth in the regions of industrial concentration in these states. An important characteristic of the rubber products industries in Punjab, Uttar Pradesh and Haryana has been the concentration in the manufacturing of footwear products, auto and cycle parts, tyres, tubes and flaps, beltings, sports goods, adhesives and moulded rubber products. The product concentration in these states are supplemented by locational concentration of rubber products industries in the regions of general industrial growth; especially, the Ludhiana – Jallunder complex and adjoining areas to the Delhi metropolitan region.

The observations emerging from the analysis of the growth and product and location specific concentration of rubber products industry in India suggest that there exists a positive relationship between the general industrial growth and the rubber products industry in the country. Therefore, it is plausible to presume that more than the locational advantage, the factors relevant to the general industrial growth in Kerala are more important in explaining the status and structure of the rubber products sector.

Perspectives on the industrial potential

The analysis on the status and structure of rubber products industry in Kerala highlights the relevance of policy imperatives in the context of economic reforms initiated in the country since 1991. Any realistic attempt to overcome the persistence of an internalised 'centre-periphery' relationship between the NR production sector in Kerala and the rubber products industrial sector in the industrially advanced regions of the country shall primarily focus on a detailed enquiry of the region specific issues and advantages as well as identification of the products for the global market. At this juncture, the strategy adopted by Malaysia since 1980s to exploit the specific locational advantages in the manufacturing of rubber products and rubber wood based products is illustrative. Although Malaysia's total rubber consumption is only 53 per cent of India's rubber consumption, the export earnings of Malaysia were higher by 365 per cent in 1996-97 (Mohanakumar and George, 1999). In a comparative sense, it is important to note that, latex products account for more than 81 per cent of Malaysia's export earnings from rubber products compared to the dominance of dry rubber products (91%) in India (Mohanakumar and George, 1999).

The comparative performance of Malaysian strategy is evident from its largest share among the NR producing countries in the exports of rubber products to the OECD economies (ITC, 1995). Malaysia is not only the market leader in the case of major rubber products such as gloves and elastic rubber thread but also the largest exporter of rubber wood based finished products to the USA, Japan and EU. The major guidelines emerging from the Malaysian experience for formulating an appropriate rubber based industrial planning in Kerala shall include selection and promotion of rubber products for the global market with higher NR and labour contents, higher value addition, free of import restrictions, negligible brand loyalty and flexible delivery schedules. In the present context, the value addition foregone from the two major by-products of rubber plantations in Kerala, viz; rubber wood and rubber honey, is estimated to be more than Rs 29000 million. Therefore, a conscious policy intervention based on perspective planning has to integrate the industrial potential of rubber products and by-products in Kerala and will favour only those processes and products where the magnitude of immediate and prospective gains are rewarding and sustainable.

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Notes

1. The colonies of settlement include USA, Canada, Australia and Newzealand. The pattern of agriculture evolved and its linkages with subsequent industrial growth in these regions were in sharp contrast to the plantation agriculture developed in the "colonies of exploitation" in the tropical Asia by the European countries.

2. The relative share of Asia in total world NR production was more than 95 per cent even in 1998. However, the relative share of the region in world NR consumption was less than 38 per cent during the same year (IRSG, 1999).

3. The combined share of top four tyre companies, viz; Bridgestone, Michelin, Goodyear and Continental in global tyre market has steadily increased from 49 per cent in 1979 to 60.1 per cent in 1998 (Barlow et al, 1994; EIU, 1999).

4. The pioneering academic attempt to delineate the missing links between the raw material base and rubber products industrial sector of Kerala was reported only in 1992 (George and Joseph, 1992).

5. For the first time, domestic consumption exceeded production by 2591 tonnes.

6. The important dry rubber products manufactured in India include automotive tyres and tubes, cycle tyres and tubes, camel back, footwear, belts and hoses etc. The latex products manufactured include latex foam, gloves, elastic rubber thread, condoms and other pharmaceutical articles. In 1997-98 the relative shares of dry rubber products and latex products in the total NR consumption in India were 82.44 per cent and 9.87 per cent respectively (Rubber Board, 1999a).

7. The units with a per capita consumption of more than 500 tonnes per annum accounted for 70.60 per cent of total NR consumption and 68.05 per cent of total rubber consumption in the state compared to 65.43 per cent and 67.53 per cent respectively at the national level during 1997-98 (Rubber Board, 1999a).

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