

国际通用 MBA 教材配套案例

生产与运作管理案例

(英文版)

Production and Operations Management Cases

厄斯金 /编

James A. Erskine



474/02



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序言

我很荣率有此机会用简短的语言就毅伟管理学院的历史、传统、教职人员和最新业绩问 您作一介绍。 数伟管理学院是加拿大西安大略大学(UWO)所属的一所专业学院、作为加拿大 历史最悠久的大学之一, 两安大路大学目前拥有17个院系和专业学院、摩落在加拿大最南部的安大路省伦敦市。这座城市拥有330 0000 几, 位于多伦多和底特律之间。两安大路大学有 26 000多名学生、4 000余名数职员工。 設作管理学院的本校在安大略省伦敦市。同时在多伦多的密西要支资有分校。而目最近在参谋也建立了分校。

历史地看, 穀伟管理学院一直是管理学界的领导者, 现将部分成就列后, 标示毅伟管理 学院日新月异的发展:

- •1922年创立了加拿大第一个培养本科生的商学系。
- 1932年开始出版杂志《毅伟商学季刊》。该杂志发行到25个国家,发行量多达10 000册, 深受学术界和管理界读者的喜爱。
- 1948年,在加拿大首次设立行政管理人员培训计划(校方要求任课教师为所有新设立的 课程准备案例教材,作为他们职责的一部分)。
- •1948年创立了加拿大第一个工商管理硕士课程。
- 1961年首创了加拿大的第一个商学博士课程。
- 1974年,被联邦政府正式指定为加拿大第一个(现在已发展到8个)国际商业研究中心 (CIBS,即美国CIBERS的前身),联邦外交部对该中心持续提供财政支援。
- 1975年, 穀伟管理学院成立了自己的出版社。该部门目前拥有2 000个加拿大的案例, 并成为哈佛案例的加拿大資料交換所。1998年, 穀伟管理学院的案例已分销至20多个 国家的100多所学院和100多家企业。穀伟管理学院全生界管理学案例研究的第二大 制作者,每年向校外读者分销案例数材超过100万册。
- 1978年开始实施第一项国际学生交换计划, 目前该交换计划已增至20余项。
- 1984年毅伟管理学院在加拿大联邦政府的支持下、在伦敦市组建国家管理学研究与开发中心的过程中发挥了主导作用。
- 1992年、毅伟管理学院被选为主导性的国际商学刊物,即《国际商学研究杂志》在1993年至1997年间的编辑总部。
- 1993年、《加拿大商学》杂志根据由各大聘用公司首席执行官、人力资源管理人员和求职顾问等人土组成的所有评选组得出的全方位评比结果、将数伟管理学院列为加拿大店养工商管理硕士的最佳学院、并且这一结论被逐年的评比一再肯定。1994年《亚洲企业》杂志又将数伟管理学院列于亚洲公认的25所世界最佳商学院的行列中。
- 1997年、《国际管理学杂志》将榖伟管理学院评为国际战略管理学文献的主要贡献者、并领先于哈佛大学与西北大学的洛格商学院、《商业周刊》将荔伟管理学院列为金世界最佳国际商学院之一、和欧洲管理学院 (DSSAD) 及伦敦商学院(LBS)并列,而且《美国新闻与世界报导》将榖伟管理学院选为全世界在行政管理人员培训计划方面最佳的15所命中学等之一。

至1998年、毅伟管理学院拥有65名全职教授。他们每年负责教授600名普通课程的和在职 行政管理人员课程的工商管理硕士生、300名本科生、40名博士生、以及范围宽广的非学位课 程。毅伟管理学院的宏伟目标是凭借各种杰出的教学计划和在相关领域中优秀的研究记录、 跻身于企世界十所最佳商学院的行列由。

在国际上、毅伟管理学院参与主要的海外项目达30年之久、并且最近又参与到亚洲(特 别是中国) 以及前苏联某些共和国的有关项目之中,这些项目正在为当地的管理学教育事业 作出贡献。

中国项目

1984年是毅伟管理学院和中国的清华大学连续合作项目开始的第一年。我们承诺为中国 学生来毅伟管理学院学习工商管理学硕士和博士做准备、与访问学者一起工作、提供在中国 的短期教学指导,并帮助清华大学经济管理学院培养管理学教师人材。该项目的另一目的是 毅伟管理学院借此进一步了解中国和中国的商业活动方式,

在项目的第一期过程中,撰写了35篇论文、案例和教学指南;有9名毅伟管理学院教授参 加了短期的访华授课; 12名中国访问学者分别在毅伟管理学院丁作一年; 培养了8名工商管理 学硕士毕业生; 所有来访的中方人员都参加了撰写案例的工作组。这一项目由加金大-中国 管理学教育计划提供资金。该项目的第二期进一步扩大发展,至1994年、经过五年的努力、 已成为毅伟与滑铁卢大学以及中国的清华大学、大连理工大学和东南大学的合资合作项目。 毅伟管理学院承诺在进一步提高中国管理学教育能力方面继续提供援助。其要点包括设计、 开发并执行1992年8月提出的通过案例教学方法教授合资企业、技术转让以及国际贸易等课程。 这一教师培训项目是通过翻译给来自中国各地的教师们进行授课,并且所有教材均已译成中 文。

一个大规模的合作出版项目已经开始实施、1992年4月、五卷国际商业案例中的第一卷已 在中国由清华大学出版社出版。该系列书籍是毅伟管理学院和清华大学合作的产物,它为中 国的经理们和学生们提供了全面的国际性商业案例。1992年~1993年,经我们在大连理工大学 和东南大学的伙伴安排,又有6本国际性教科书的中文版通过有关出版社在中国出版。

从那时起、出现了大量由毅伟管理学院发起的有关中国的案例写作、各种书或被重印、 翻译或专为中国市场而撰写、我们还在清华大学开设了商学导论课程、进行了教授互访等等。 所有这些都体现出毅伟管理学院决心实现对中国作出的直诚的承诺。

Canrens Stagg

加拿大毅伟管理学院院长 一九九八年六月

Preface from The Dean of the Richard Ivey School of Business

It gives me great pleasure to have this opportunity to introduce you to the Ivey Business School by briefly explaining a little about its history, traditions, faculty and recent achievements. The Richard Ivey School of Business is a professional School within The University of Western Ontario (UWO). One of Canada's oldest universities, UWO is now an academic community of 17 faculties and professional schools. It is home to more than 26,000 students and over 4,000 faculty and staff. Located in the southern-most part of Canada, London, Ontario is a city of 330,000, halfway between Toronto and Detroit. Although Ivey is based in London, Ontario, it also has campuses in Mississauga (Toronto) and most recently, in Hong Kong.

Historically the School has been a leader in management development. A partial list of achievements follows. They illustrate the proactive nature of change at Ivey.

- In 1922, the first undergraduate business department in Canada was established.
- In 1932, the school began to publish its own journal. Known as Ivey Business Quarterly, it reaches out to both academic and management audiences and enjoys a circulation of 10,000 in 25 countries.
- In 1948, Canada's first executive development program was established. (From the beginning, faculty members were required, as part of their responsibilities, to produce case material for the new programs being designed.)
- In 1948, the first MBA program in Canada was established.
- In 1961, Canada's first Ph.D. program in business was introduced.
- In 1974, official designation was received by the Federal Government as Canada's first, of what are now eight, Centre(s) for International Business Studies (CIBS). (The CIBS were the forerunner to the CIBERs in the United States). Financial support for this Centre continues to be provided by the Federal Department of Foreign Affairs.
- In 1975, Ivey opened its own case and publications office. This office now holds an inventory of 2,000 Canadian cases and is the Canadian clearing house for Harvard cases. In 1998, Ivey cases were being distributed to over 100 teaching institutions and 100 corporations in over 20 countries. Ivey is the second largest producer of management case studies in the world, with over 1,000,000 copies studied each year by people outside the university.
- In 1978, commencement of its first international student exchange program took place. Over twenty such exchange programs are now in place.

in the development of Chinese institutional capacity for management education. A major element was the design, development and delivery in August 1992 of a program on teaching Joint Ventures, Technology Transfer, and International Trade via The Case Method. This train-the-trainers program was offered to academics from across China, through interpreters. All of the teaching material was translated into Chinese.

A large scale joint publishing effort was undertaken. In April 1992, the first volume of five international business casebooks was published in Chinese by Tsinghua University Press. This series constituted a comprehensive collection of international business cases for Chinese managers and students. In 1992-93, six international texts were published in Chinese by presses arranged through our partner schools at Dalian and Southeast.

Since then a great deal of Ivey-initiated China-related case writing has occurred: various books have been either reprinted, translated or specifically written for the China market; we have offered introductory-business courses at Tsinghua; faculty visits have occurred, and so forth. All of this has occurred in the spirit of demonstrating Ivey's genuine commitment to China.

Lawrence G. Tapp

Dean

Richard Ivey School of Business

总编按语

中国国家教育部在审定中国工商管理硕士课程内容时提议,每门课程的25%要采用案例 教学方法。这一要求在某种程度上是为保证中国未来(和现有)的经理们既能够面对崭新与 众不同的各种学习环境,又能够张颖制定决策所必需的、与基础理论并重的实际经验。

本系列案例从书的宗旨正是为中国提供最高品质的教学用部分案例。以期满足当前的迫切需求。在此提供的案例都是全面的、实际的、要求进行管理决策的现场情景案例。其中不包括对案例历史的赘述(这无助于学员引制定决策)、小型案例及"花边案例"(这些不适于用作80-90分钟的课时内容)、或图书馆资料(从图书馆的二手资料所作的总结远不如直接与经理们交谈所总结的案例更能增长见识)。

此次首批出版的系列案例丛书是为直接配合中国工商管理硕士课程的各门必修课程而编写的、我们随后将为更多的常规洗修课程出版案例洗集。

这些案例选案的主要资料与未源于加拿大西安大略大学的敲作管理学院。敲伟管理学院 是全世界第二大的数学案例制作者,并且是当今亚洲案例的最大制作者,数伟管理学院为使 这些书籍得以问世,放弃了正常出版所需的全部许可费用,这是其它一些学院不情愿做的。 数伟管理学院表心对中国履行比互随的未法。

本系列从书得以出版全靠下列各方鼎力相助:

- 万国出版公司总裁孙立哲先生的动议。
- 清华大学经济管理学院院长赵纯钧先生与副院长陈小悦先生的鼓励与协助。
- 企业资助(在某些情况下,数伟管理学院能得到企业的资助、以获得完成此系列从书所需的重金投入。我们将在每本书的适当位置对该书的资助者表示感谢)。
 - 級伟管理学院中为各卷选择案例并撰写了是言的教授同仁们。
 - 我们的编辑协调人玛丽·罗伯特女士。

包铭心

Law Beaming

安大略省伦敦市一九九八年六月

Note from the Series Editor

The State Education Commission committee which looked at the content of MBA programs in China has suggested that 25% of each course utilize the case method. Such a requirement is intended in part to ensure that future (and existing) managers in China are (A) exposed to a wide range of new and varied learning situations; and (B) gain practical experience in decision-making, so as to balance the underlying theory.

This case series is intended to partially fill China's immediate need for highest quality teaching cases. Here a case study refers to a comprehensive, field-based, decision-requiring picture of an administrative situation. It does not include descriptive case histories (which require students to make no decision); mini-cases or vignettes (which are anecdottal, and not suitable as a stand-alone basis for an 80-90 minute class); or library-based (such secondary sources produce far fewer insights than actually interviewing managers for the cases).

This initial series of casebooks was compiled to directly correspond to each of the required courses in China's MBA programs. Subsequent case collections will be compiled for popular elective courses.

The primary source of cases for these case collections is the Ivey Business School, University of Western Ontario, Canada. Ivey is the second largest producer of teaching cases in the world, and the largest producer of current, Asian cases. Ivey waived all of its normal permission fees in order to see these books produced. Certain other institutions were unwilling to do so. Ivey is committed to China.

The production of this Series would not have been possible without:

- the initiative of Lee Sun, President of Multi-Lingua;
- the encouragement and assistance of Tsinghua Dean Zhao Chunjun and Assistant Dean Chen Xiaoyue;
- corporate sponsors (In some instances, Ivey was able to obtain corporate sponsorship to assist with the heavy costs associated with the completion of this series. Where appropriate, the sponsor of any book is acknowledged in that particular volume.):
- my faculty colleagues at Ivey who selected the cases and wrote the introductions to the individual volumes;
- our editorial coordinator, Mrs. Mary Roberts.

Paul W. Beamish London, Ontario June 1998

厄斯金(James A. Erskine)

厄斯金在藝術管理学院教授作业管理学课程,他专注于研究人在系统中的作用。他在加 尔大西安大略大学取得了工学学士和工商管理学硕士学位、并在美国印地安那大学取得博士学位。过 法30年间,他领导过的众多案例方法研讨会和负责多项管理学发展计划,在20多个国家中拥有数以干计的参加者。他是下列3本案例方法学教科书的合著者之一:《案例写作》、《案例号习》和《案例教学》。1988年~1989年间,他担任巴基斯坦拉合尔管理科学大学的校长,并曾代款伟管理学院优等本科生商学教学计划部的主席。他荣获3M公司教授奖金、被公认为加拿大最佳大学教授之一。

James A. Erskine

James A. Erskine teaches Operations Management at the Richard Ivey School of Business where he has a special interest in the human in the system. He has Engineering and MBA degrees from the University of Western Ontario in London, Canada and a doctorate from Indiana University in the U.S.A. Over the past 30 years Jim has conducted case method workshops and management development programs for thousands of participants in more than 20 countries. He is a co-author of three case method texts: Writing Cases, Learning With Cases, Teaching With Cases in 1988-89, he served as Dean at the Lahore University of Management Sciences in Pakistan and is a past chairperson of the Honors Undergraduate Business Program at Ivey. Jim is a 3-M teaching fellow recognizing him as one of Canada's best university professors.

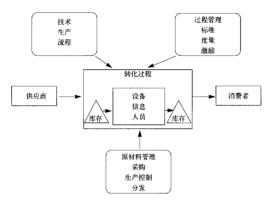
编者的话

运作基对设备、流程、人员等进行规划、设计、指挥与控制,以便将原材料和能源转化 为产品。很多人认为对于工厂来说,运作就是生产出物质产品,实际上运作活动还包括全范 围的以服务和以资源为基础的产业群。

运作原理应用于每个机构组织、工业企业和各种环境中,运作活动包括制定计划、安排 流程、设备操作、质量控制、人力资源管理以及产品的交货和服务的送达等。

运作系统将输入改变或"转化"为输出,在很多情况下,运作活动对企业的生存能力至 关重要。对这种"转化过程"进行细致管理,能够使运作活动为企业有效达到目标作出贡献。

运作活动及其组成部分



本案例集注重增加价值及在竞争中取得最佳运作效果,特别是有些案例分别侧重于减少 浪费、确保质量、提高运作能力、最大限度开发人的潜能、与时间竞赛以及通过运作活动获 得持续的竞争优势。

A Note from the Editor

Operations is concerned with the design, planning, direction, and control of the facilities, processes and people used to transform materials and energy into products. Many people think of operations in terms of factories that produce physical goods, but operations also includes the full range of service and resource-based industries.

Operations principles apply in every organization, in every industry and in every environment. All organizations perform the operations functions of planning, scheduling, equipment operation, multiv control, human resource management and product and service delivery.

Operating systems change or "<u>transform</u>" inputs into outputs. In most instances, operations are crucial to the organization's ability to survive. Careful management of the "<u>transformation</u> process" is necessary so that it contributes effectively to the goals of the enterprise.

Process Management Technology standards product measurement process motivation Transformation Process Suppliers facilities Customer information /stock people Materials Management purchasing production control distribution

An Operation and its Components

The selected cases focus on adding value and competing on operations excellence. More particularly, specific cases deal with eliminating waste, ensuring quality, enhancing capability, maintaining human potential, competing on time and sustaining competitive advantage through operations.

Jim Erskine



Content

CASE T. GREAVES BREWERY (A)

An expansion in the bottling plant of a brewery leads to a reassessment of the manual palletizing operation. It is possible to purchase expensive automatic equipment and a choice of makes is involved.

INDUSTRY: 13 ISSUES: 112

13 Food and Kindred Products
112 Equipment Selection/
Maintenance

9 Capacity Analysis

376 Equipment Investment

185 Machinery and Equipment Trinidad, West Indies Small 1990 7 PAGES AUTHOR: Piper, C.J.

来到了 Citeaves/四亚公司

瓶装酒酿造厂的扩建导致了 对人工货盘装运的重新评价。可 能要购买昂贵的自动化设备,也 包括产量的选择。

© P1

CASE 2. UNICON CONCRETE PRODUCTS. 秦河 2. 清津 (H.K.) LTD

Unicon supplies pre-cast concrete products to the flourishing construction market in Hong Kong, Mr. Li, the deputy managing director, is evaluating an opportunity to pursue a "blanket" regulatory approach for Unicon's estosmo-designed concrete products with its largest customer, the Hong Kong Blousing Authority. This opportunity promised to offer cost savings to both Unicon and this customer, although questions remain about the broader implications for Unicon's manufacturing operations and other customers. At the same time, management must develop a plan to expand its manufacturing capacity if Unicon hopes to capitalize on the rapidly expanding market and fend off new competitors from mainland China.

TEACHING NOTE: 898D06

INDUSTRY: 25 Stone, Clay, Glass and Concrete

ISSUES: 201 Manufacturing Strategy

256 Product Life Cycle 137 Government Regulation

61 International Rusiness

Hong Kong Medium 1997 14 PAGES

AUTHOR: Klassen, R

CASE WRITER: Inhuson F

CASE 3 EARTH BUDDY

The Earth Buddy case introduces the topic of process analysis. Ahout 15 operators work in a simple hybrid batch-flow environment to produce the Earth Buddy novelty product. Sufficient information is

案例 2 香港Unicon混凝土制品 有限公司

18 P8

案例3 Earth Buddy 公司:

Earth Buddy 案例介绍了过程分析问题。大约15名操作人员在一个简单的混合生产流动环境

presented to introduce and discuss the following concepts in an 80-minute class: capacity, throughput time, cycle time, bottleneck identification and resolution, and work-in-process inventory accumulation and draw-down. Issues that can be explored during the discussion include: shift scheduling, the impact of cross-training, batch versus flow production, rush orders, and the impact of defects on capacity.

INDUSTRY: 0

ISSUES: 252 Process Analysis 39 Capacity Analysis

Manufacturing

Canada Small 1994 4 PAGES 4 MCEROD MOTORS LTD

AUTHOR: Piper, C.J.

中, 生产Earth Buddy 脾新产品。 80分钟的上课时间里主要介绍容 量、生产时间、循环时间、瓶颈 论证及解决办法、工作过程中的 存货积累或减少等内容。讨论的 问题包括:改变生产时间、交叉 培训的作用、产量、紧急命令及 能力缺乏的影响。

© P22

McLeod Motors recently rationalized a number of motor end shields to reduce manufacturing costs. improve service, and reduce inventories. However, inventories have apparently risen. Students must identify why McLeod has inventory, how large the inventory might have been before the rationalization, how large they might be now, why they are so large, and what could be done to reduce inventory levels. The case can be used in conjunction with a discussion on inventory function.

TEACHING NOTE: 895D08

INDUSTRY: 27

Fabricated Metal Products ISSUES: Inventory 431

209 Materials Management Inventory Planning/Control

Scheduling

British Columbia, Canada Small 6 PAGES

AUTHOR: Haywood-Farmer, J.S.

McLeod 汽车有限公司最近 对一批汽车后盖进行合理化改革, 降低生产成本,改进服务,减少 存货。可是,最近存货明显上升。 学生必须指出为什么McLeod 汽车 有限公司拥有如此名的存货。在 合理化改革之前, 存货量有多大, 如今的存货量可能有多大。为什 么这么大, 如何降低存货量。本 案例适用于关于存货量作用的讨 îÈ.

障 P26

ASES FRANZ BERGER MASTER BREWER *** Pranz Berger in

Franz Berger, Master Brewer, is facing serious operating problems in the malthouse at the Dragon Brewing Company in China. These problems are affecting the quality of beer and endangering the health and safety of employees. Franz is considering three investment alternatives and is concerned not only about the financial implications but also the organizational implications and the "politics" of his recommendation.

TEACHING NOTE: 898D07

INDUSTRY: 13 Food and Kindred Products

Franz Berger-酿造业之首, 正面临着来自中国的龙徽公司专 芽糖厂严重的生产问题。这些问 颇影响了啤酒质量, 提坏了另下 的健康和安全。Franz Berger 正 在考虑三种可供选择的投资方案。 其中不仅包括财务因素、也包括 组织结构因素以及政治因素。

FF P32

ISSUES:

- 168 Investment Analysis
- 38 Quality
- 252 Process Analysis
- 231 Organizational Structure

China Large 1996 16 PAGES

AUTHOR: Erskine, J.A.

CASE 6 LAMSON CORPORATION

This business game allows participants to make 12 scheduling decisions under conditions of demand uncertainty. It is played with groups of 3-5 participants and does not require a computer.

TEACHING NOTE: 894D01

INDUSTRY: 25 Stone, Clay, Glass and Concrete

Products

iSSUES: 301 Scheduling

431 Inventory 307 Shortages

87 Decision Theory

Medium 1995 8 PAGES

AUTHOR: Leenders, M.R.

i例 6 Lamson 公司

本案例允许参加者在条件不确定的情况下进行12种选择。它允许三、五人一组进行讨论,不需要计算机。

F P49

E7. CPSIM: THE CRITICAL PATH SIMULATOR 案例 7. CPSIM: 关键路径仿真器

CPSIM is a critical path simulator that runs on Macintosh Computers. Participants manage a fairly complex construction project that is due for completion in 107 simulated days. The task is manage activity durations so that effective trade-offs are made between the costs incurred by crashing (speeding up) activities, and avoided by reducing the penalty costs for late completion. Adjustments must be made for unforeseen delays and speedups which occur during the project. CPSIM displays the Project's CPM chart, and calculates critical paths and slacks. Requires diskette 9A91DDOS.

INDUSTRY: 60 Business Services

ISSUES: 55 Computer Assisted Cases

80 Critical Path

273 Project Management

308 Simulation

6 PAGES

AUTHOR: Piper, C.J.

CPSIM 是一个在Macintosh 计算机上运行的仿真器。参加人

计算机上运行的的复数。参加人 完成一项相当复杂的结构设计。 整个任务是对作业过程进行管理, 以便在作业提前完成所需的成本 与为避免作业或误遭受损失的对于 方为避免作业或误遭受损失的对于 无法预期的误期与规则,必须随 时作出调器。CPSIM显示了此项 安全的影響,并使 BEE和用 管容量进行了测算。

ι© P57

CASE 8 LONGXI MACHINERY WORKS -QUALITY IMPROVEMENT (A)

Lin Zhang has just received approval for the formation of a new quality control group at Longxi, located in Zhangzhou, China. This new group must 位于中国漳州的龙溪机械厂 批准组建一个新的质量管理小组、 investigate and reduce the high defect rate of a critical part used in the final manufacture of multi-cylinder diesel engines. Lin must decide who will be directly involved in the team, which data must be collected analyzed, what is causing the problem and which actions should be taken. The improvement project is set within the context of Longxi's broader quality and systems, thus encouraging students to evaluate and push forward corporate quality systems. This case is the first in a three-part series that applies the principles and tools of total quality management (TQM) in a Chinese setting. The case can cither be used independently or in combination with the (B) case, number 9A8D003 and (C) case, number 9A8D003.

INDUSTRY: 28 Machinery except Electrical ISSUES: 474 Ouglity Management

S: 474 Quality Management 161 International Business 228 Operations Manageme

228 Operations Management 261 Production Processes

China Medium 1996 18 PAGES

AUTHOR: Klassen, R CASE WRITER: Li L; Gleave T

CASE 9 NAVISTAR: ENVIRONMENTAL 案例 9 MANAGEMENT (A)

Dan Uszynski, environmental coordinator at the Chatham Assembly Plant of Navistar International Corporation, must develop a total waste management program which addresses both corporate waste reduction objectives and regulatory requirements. At the time of the case, a plant-wide waste audit had just been completed by an outside contractor in response to the introduction of provincial legislation, referred to as 3R Regulations. Dan must assess the competitive implications of different alternatives, design the program, decide which materials will be recycled, identify who will be involved in implementation, and take into account the reaction of different stakeholder groups.

TEACHING NOTE: 896D01

INDUSTRY: 30 Transportation Equipment ISSUES: 199 Manufacturing

111 Environment

228 Operations Management

245 Pollution

Ontario, Canada Large 1994 15 PAGES

AUTHOR: Klassen, R CASE WRITER: Johnson F #® P63

if 9 Navistar国际公司: 环境管理

IS P85

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